Safety Maintenance and Production

EST. 1901 AMERICA'S PIONEER MAGAZINE IN ITS FIELD

FIFTY CENTS APRIL, 1955

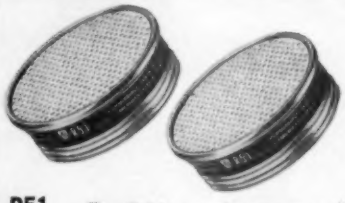
Respiratory Protection

Be Wise—Economize—Standardize—Simplify Stock Problems —with the AO† R5000 Respirator*

Here's *complete* respiratory protection in one "package"! If you have several respiratory hazards to control, the AO R5000 will save you inventory problems and money. This ingenious twin cartridge respirator converts to many types of protection quickly merely by interchanging the filters and cartridges. Ask your nearest AO Safety Products Representative.

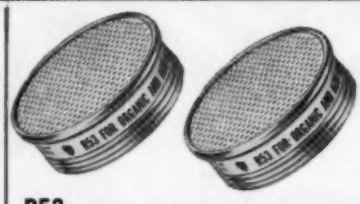
R50 — For combination of all dusts, not significantly more toxic than lead. B.M.2156

R50A — used with R50, converts to a dust and mist respirator. Protects against all dusts not significantly more toxic than lead, pneumoconiosis-producing mists, chromic acid mists. B.M. 2156 includes B.M.2156A



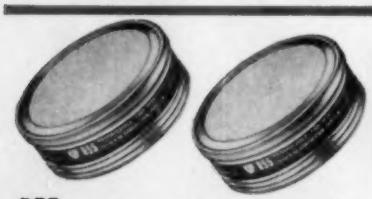
R51 — For light organic vapors and gases of paint spraying, degreasing, dry cleaning. B.M.2304

R52 — For acid gases, and mists of plating operations, pickling tanks, etc.



R53 — For combined acid and organic gases like carbon tetrachloride and acetic acid.

R54 — For protection against low or nuisance concentrations of ammonia.



R55 — For those who are exposed to both organic vapors and all dusts not significantly more toxic than lead. B.M.2305

R56 — For fumes produced in welding, burning, smelting and refining. B.M.2163

R57 — For dusts, mists, fumes, significantly *more* toxic than lead including radioactive particulate matter.

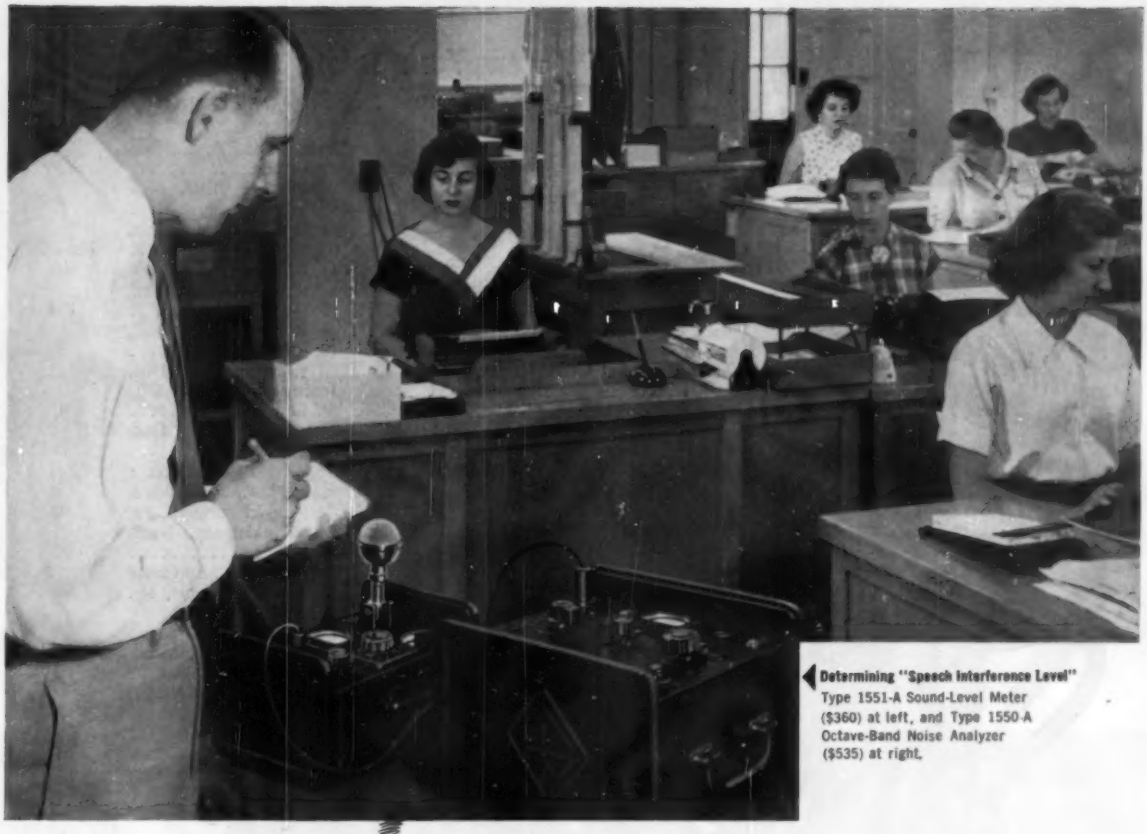
*One Face Piece Takes 9 Filters and Cartridges

†T.M. Reg. by American Optical Company

American Optical
SAFETY PRODUCTS DIVISION

SOUTHBRIDGE, MASSACHUSETTS • BRANCHES IN PRINCIPAL CITIES

(For details, use Key # D-1 on card on page 85)



Determining "Speech Interference Level" Type 1551-A Sound-Level Meter ($360) at left, and Type 1550-A Octave-Band Noise Analyzer ($535) at right.

Noise!

First Measurement — then Control

Analysis of the frequency distribution of noise energy is needed for the satisfactory solution of a noise problem.

Preliminary investigation with G-R's Sound-Level Meter or Sound-Survey Meter is recommended to give an idea of the magnitude of the problem. But to get a good measure of the seriousness of the noise — with regard to hearing damage or difficulty in hearing verbal instructions — noise dissection into its separate frequency elements is necessary.

Such analysis is most readily accomplished with the G-R Octave-Band Noise Analyzer operating from the Type 1551-A Sound-Level Meter. The noise energy in each of eight frequency bands (one octave apart — from 20 to 10,000 cps) is accurately measured with this equipment. Measurements are rapid, merely the sum of the attenuator and panel meter indications.

Information in this form is most helpful in "silencing" the noise-contributing elements. The data can also be used to calculate speech interference level, a figure which gives a measure of the difficulty in hearing an average speaker in the presence of the noise. This is an accepted method of rating office and factory noise; the procedure can be used to describe quantitatively the noisiness of any surrounding.

The means of determining speech interference level, and many other techniques of sound measurement are described in detail in the G-R HANDBOOK OF NOISE MEASUREMENT by Dr. L. L. Beranek, Associate Professor at MIT, and Dr. A. P. G. Peterson, General Radio Company. This publication of over one-hundred pages is a comprehensive treatment of the subject of noise and its measurement. It describes in simple and direct language standard measuring equipment and interpretation of results. It makes recommendations as to the most fruitful approach in minimizing detrimental sounds. This up-to-date HANDBOOK is available from G-R at $1.00 to cover printing, mailing and handling costs only. In the interests of avoiding unnecessary clerical expense, please enclose check or dollar bill with your order.

GENERAL RADIO Company

275 Massachusetts Avenue, Cambridge 39, Massachusetts, U.S.A.

90 West Street NEW YORK 6
8055 13th St., Silver Spring, Md. WASHINGTON, D. C.
920 S. Michigan Avenue CHICAGO 5
1000 N. Seward Street LOS ANGELES 38

GR 1915-1955 40 Years of Pioneering in Electronics

(For details, use Key # D-2 on card on page 85)

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TORIT

UNITIZED

DUST CONTROL

eliminates dust at its source!

TORIT UNITIZED

DUST CONTROL means each machine has its own custom-tailored dust collector designed to work specifically for *that* machine. There is no guess work, or average suction. Furthermore, dust control is provided only when that machine is running . . . there is no waste of power such as you have with centralized control when only a few machines are operating. This means better dust control at lesser operating cost and less initial installation cost. Get the facts now on how Torit will work better to . . . "CLEAR THE AIR".

See our catalog in Sweet's Machine Tool File, or write:

TORIT

MANUFACTURING CO.

304 WALNUT STREET

ST. PAUL 2, MINNESOTA

(Use Key # D-3 on Inquiry Card on page 85)

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(April 12–15, Hotel Statler, New York City)

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USSSCO's new *all Plastic* SAF-I-SPEC

new styling assures wearer acceptance

new design Acetate frames provide greater strength

new light-weight for comfort
(new SAF-I-SPECS weigh less than one ounce)

new colors in charcoal and burgundy

2 sizes
Large or Small
for men and women

This new light-weight safety spectacle features ophthalmic type temples and strong, rugged brow-bar — with nickel steel hinges for greater strength and longer life. Velvet-soft nose piece. Lens locks in place securely — easily removable without tools. Meets Federal specifications for optical qualities and impact resistance.

A fully experienced USSSCO service engineer is available to assist you in your safety program.

Contact your nearest USSSCO Sales Office listed in the classified section of your telephone directory or write direct to USSSCO General Offices, Kansas City, Missouri.

Working for You to Make Safety Work

UNITED STATES SAFETY SERVICE CO.
KANSAS CITY 6, MISSOURI

BRANCHES IN PRINCIPAL INDUSTRIAL CITIES
IN CANADA: PARMELEE, LTD., TORONTO & MONTREAL

(For details, use Key # D-14 on card on page 85)

FINE ORGANICS' 'SAFE-TEE' SOLVENT F.O. 128 GOES TO WORK FOR INDUSTRY

Actual photographs of machines designed and built by **MARTIN AIRCRAFT, Baltimore, Md.** for cleaning and degreasing large and small parts with F.O. 128

FINE ORGANICS is proud of the part it plays in helping THE MARTIN CO. perform an effective cleaning operation on both large and small parts. Many leading organizations are finding F.O. 128 not only a reliable cleaner but a decided factor in the elimination of personnel health hazards and wasted man hours.

PLANT MAINTENANCE SUPERVISORS

appreciate the versatility of this fast, non-corrosive cleaning solvent. Ideal for heavy work, yet will not damage delicate machined surfaces or attack insulation. It is used effectively for cleaning and degreasing ELECTRIC MOTORS, POWER GENERATORS, CONDENSORS, STARTERS, PRODUCTION EQUIPMENT, and all areas in the plant where greasy, oily dirt has to be removed.

SAFETY ENGINEERS

find the high flash point makes the use of this solvent desirable wherever fire hazards prevail.

INDUSTRIAL HYGIENISTS

recommend replacing Carbon Tetrachloride with F.O. 128. Low toxicity aids in avoiding harmful effects on personnel.

Write Dept. 'B' for information on our other Safe-Tee Solvents and the name of your nearest F.O. representative.

Ask for our Technical Bulletin "How To Clean Electric Motors."

FINE ORGANICS, Inc.
211 East 19th St. · New York 3, N.Y.

(For details, use Key # D-5 on card on page 85)

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Super Safety Cleaner

MULTI-CLEAN *Method*

with **ACTIVATED HCP**

What is HCP?

HCP is the new activated chemical additive in Super Safety Cleaner that generates *higher cleaning power*. Developed by Multi-Clean chemists for fast, safe cleaning of all types of floors, the HCP additive powerizes the cocoanut oil action instantly—freeing dirt and holding it in suspension. Dirt floats away with wet pickup vacuum cleaner, floor squeegee or mop.

***HCP* helps free dirt and grime from floors almost instantly.**

***HCP* helps hold dirt and grime in liquid suspension for easy removal.**

***HCP* is completely safe for all types of floors.**

CLEANS ALL FLOORS *FAST!* SAFELY!

Super Safety Cleaner, with HCP added, gets rid of floor dirt *fast*. But not at the risk of floor damage. **Super Safety Cleaner is *safe*.** Field tests have proved it is harmless to asphalt tile, rubber tile, linoleum, terrazzo, concrete, wood, magnesite and all other types of floors. **Super Safety Cleaner is *economical*.** Because of its high concentration, it goes more than twice as far as ordinary cleaners. Just 1½ ounces added to a gallon of water, even hard or cold water, will do almost all cleaning jobs *fast*. For fast removal of heavier wax build-ups, 8 ounces of Cleaner per gallon of water is recommended.

We Guarantee that Super Safety Cleaner, with HCP added, has been formulated from the finest ingredients under strict quality control, and when used according to directions *must* give satisfactory results.

Super Safety Cleaner with HCP is also available with germicide antiseptic added which eliminates odors and kills harmful bacteria or fungus organisms.

FREE TEST

See for yourself how Super Safety Cleaner with HCP will clean your floors. If you wish, a Multi-Clean distributor will be happy to make the test for you.

Send coupon for your free test. Send it Now! . . . no obligation.

MAIL THIS COUPON TODAY!

MULTI-CLEAN PRODUCTS, INC.
2277 Ford Parkway, Dept. SMP-45, St. Paul 1, Minnesota.

Gentlemen: Sure, I'd like a free test for my floors and more information on Super Safety Cleaner with HCP. I understand this puts me under no obligation.

Name_____

Address_____

City_____ Zone____ State_____

(For details, see Key # D-6 on card on page 85)

COVER GOGGLES
FOR COMPLETE PROTECTION

WATCHEMOKET eye SAVERS

SOFT VINYL FRAME
For Safe, Comfortable, Form-fit

Model 440 SV—clear frame **460 SV**—green frame

Heavy Impact Goggles with replaceable, optically perfect, methacrylate lenses.
Clear Lens (C) .125" thick
Green Lens: Light (G2) Medium (G3) .080" thick

Model 441 SV—clear frame **461 SV**—green frame

Average Impact Goggles with replaceable, optically perfect, acetate lenses.
Clear Lens (AC) .060" thick
Green Lens (AG) 0.50" thick

Models 490 or 491 — opaque black frames
Furnished with Stac-Vent only
Methacrylate Lenses: same as 440
Acetate Lenses: same as 441

STAC-VENT (SV) . . . a new principle in goggle ventilation, proven to provide clearer fog-free vision, more comfort and greater safety. Other types of ventilation available: Regular Ventilation (RV), Screen Ventilation (CV), or No Ventilation (NV).

Safe, Shatterproof Lens Easily Replaced. Eye Savers lenses will not shatter or splinter with impact . . . will not pit. Lenses are easily replaced by removing the "lock bar" that positively locks the lens in the frame. No special tools needed. Lenses are interchangeable in all Soft Vinyl Frames.

Fits Over Any Prescription Frame — Extra wide 6" lens in the large vinyl frame provides ample space for metal or horn rimmed glasses. Frame forms a bumper that prevents the lens surface from touching when goggle is laid flat on a table or bench.

Safer, More Comfortable to Wear — Eye Savers, soft Vinyl frames form-fit any shape face comfortably. Flanged nose bridge fills the gaps around the nose to assure greater protection. Adjustable, elastic headband holds goggles in position.

OTHER SOFT VINYL GOGGLES

WELDING GOGGLE Model 492

Large opaque black vinyl frame form-fits the face. Stac-Vent provides light-tight ventilation. Removable lens holder holds replaceable standard 50 mm round, Federal Specifications, welding filters—shades 3, 4, 5, or 6 available. Glass filters protected inside and outside by acetate cover lenses.

COVER GOGGLE Model 442 SV

Same frame as Model 440 with interchangeable lens holder holding standard 50 mm round safety glass lenses. Provides maximum protection where there is extreme abrasion. Glass lenses easily replaced in lens holder. Cover lenses can be provided to protect glass lenses from pitting.

ONE PIECE ACETATE GOGGLES

CHEEPEE Model 99

Low cost one-piece acetate goggle . . . close fitting, lightweight and comfortable. A special forming process never effects the lens surface . . . provides optically perfect, full, all around vision . . . no distortion of image. Adjustable, elastic headband provided. Available in clear and medium green.

D-LUX Model 100

One piece, acetate goggle fits over most prescription glasses. Formed optically perfect with full all around vision . . . no distortion of image. Adjustable, elastic headband provided. Exceeds federal specifications for resistance to breakage and for optical qualities. Available in clear and medium green.

Quality Eye Protective Equipment *Made by the Leaders in Plastics*

WATCHEMOKET OPTICAL CO., INC.

238 West Exchange St. PROVIDENCE 3, R. I. *In Canada: Levitt-Safety Limited, Toronto 10, Montreal 24*

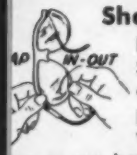
(For details, use Key # D-7 on card on page 85)

SAFETY SPECTACLES
FOR LIGHT WEIGHT AND COMFORT

WATCHEMOKET eye SAVERS

"Featherlight" TUC-AWAY
or 90% Protection Worn All the Time

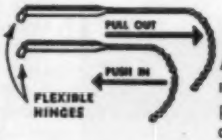
Model 415 — plastic retrax temples (illustrated)
Model 412 — metal retrax temples
Model 410 — plastic club temples



Shatterproof Methacrylate Lenses

Replaceable — Interchangeable — Eye Savers "Tuc-Away" lenses are plano, optically perfect, .080" thick for safe, impact protection; will not shatter or pit. They provide full, clear vision with side shield protection or cup type side and bottom protection. Available in clear, green and gold shades.

Economical . . . initial cost is low, maintenance is eliminated, replacement lens cost is low. It pays to have 90% protection 100% of the time instead of 100% protection only 50% of the time.



Adjustable Retrax Temples — Plastic or metal Retrax Temples telescope in and out to provide proper head fit. Universal Nose Bridge assures comfort and eliminates need for extra stock sizes. One size fits all.

SPECIFY LENS BY CODE NUMBER				
Type Lens	*Clear*	*Light Green*	*Med. Green*	*Gold*
Regular Side Shield	CSS	G2SS	G3SS	YSS
Full 1" Side Shield	CSSF	G2SSF	G3SSF	YSSF
Semi-Cup Shield	CSC	G2SC	G3SC	YSC
Full-Cup Shield	CFC	G2FC	G3FC	YFC

VISOR-TUC

The Visor-Tuc with over eyes "VISOR" provides almost 100% protection with comfort. Visor fits snugly against the forehead. All lenses are interchangeable in Tuc-Away.

Model 425—plastic retrax temples
Model 422—metal retrax temples (illustrated)
Model 420—plastic club temples

SPLIT-JOINT

FRAME ONLY Model 80

Furnished for prescription use with standard 47 mm P-3 shape lenses. Lenses not furnished.

FRAME WITH PLANO Model 80 MS

Safety spectacles with optically perfect, curved, methacrylate lenses, .080" thick, clear (MSC), light green (MSG2), medium green (MSG3).

SIDE SHIELDS

SNAP-ON SHIELDS Model 115

Extra side protection with prescription safety spectacles can be obtained by snapping on these deep cup acetate side shields. Will fit on all sizes of safety frames. Available in clear (AC) or medium green (AG). These eye shields are easy to attach and remove, thanks to nickel silver clip-holders which hold them in place.

CLIP-ONS

TUC-OVER
MODEL 175 Medium
MODEL 176 Large

Featherlight Tuc-Overs are all plastic with integral visor protection. Replaceable, optically perfect lenses are shatterproof, curved methacrylate .080" thick, available in clear (C) light green (G-2) and medium green (G-3). Frames are available in a choice of translucent white or green in medium or large.

EYE SHIELDS

METHASPEC Model 55

Low cost Methaspec Eye Shields are the ideal visitors' protection. The lens and visor are molded in one piece, formed of guaranteed optically perfect .080" thick methacrylate in clear (C) with black painted visor, light green (G-2) and medium green (G-3). Retrax temples and lens angle device permit easy adjustment to fit comfortably.

Quality Eye Protective Equipment *Made by the Leaders in Plastics*

WATCHEMOKET OPTICAL CO., INC.

238 West Exchange St. PROVIDENCE 3, R. I. *In Canada: Lovitt-Safety Limited, Toronto 10, Montreal 26*

(For details, use Key # D-7 on card on page 85)

Get EXTRA Safety with LAMCO #22 FLOOR WAX

Aetna WINDOW CLEANING CO.
John Hancock, as well as the other buildings we service, remark on the high degree of safety we bring them with Lamco.
Lamco wax has helped us to keep our safety tests perfect.
Since the use of Lamco #22 we have not had a single slip or fall case reported in our stores.
LAMCO #22 SAFETY WAX
ANTI-SKID
FLOOR WAX
LINOLEUM · WOOD · RUBBER
TERRAZZO · ASPHALT · TILE

LAMCO

Anti-Skid Floor Wax Saves You Up to 50% of Floor Maintenance Costs

You save labor costs, cut them in half in most cases, because Lamco lasts twice as long on the floor. You save material costs, because Lamco goes twice as far on the floor. You save the floor itself. You get longer, hard wearing service.

WRITE TODAY FOR **FREE** BOOKLET HOW TO CUT FLOOR MAINTENANCE COSTS UP TO 50%

Lamco Chemical Company
33 Commercial Wharf
Boston 10, Mass.

I want to know how Lamco can slash my floor maintenance costs by up to 50%.

NAME_____

ST. & NO._____

CITY, ZONE, STATE_____

(For details, use Key # D-8 on card on page 85)

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For a copy of booklet described on opposite page, use Key # D-9 on Inquiry Card on page 85

Pittsburgh COLOR DYNAMICS®

Helps Employees See Their Work Better!

Modern system of painting improves efficiency and morale by providing better lighted and more cheerful work areas in California machine shop of Westinghouse Corporation

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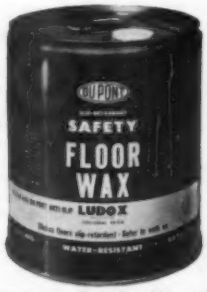

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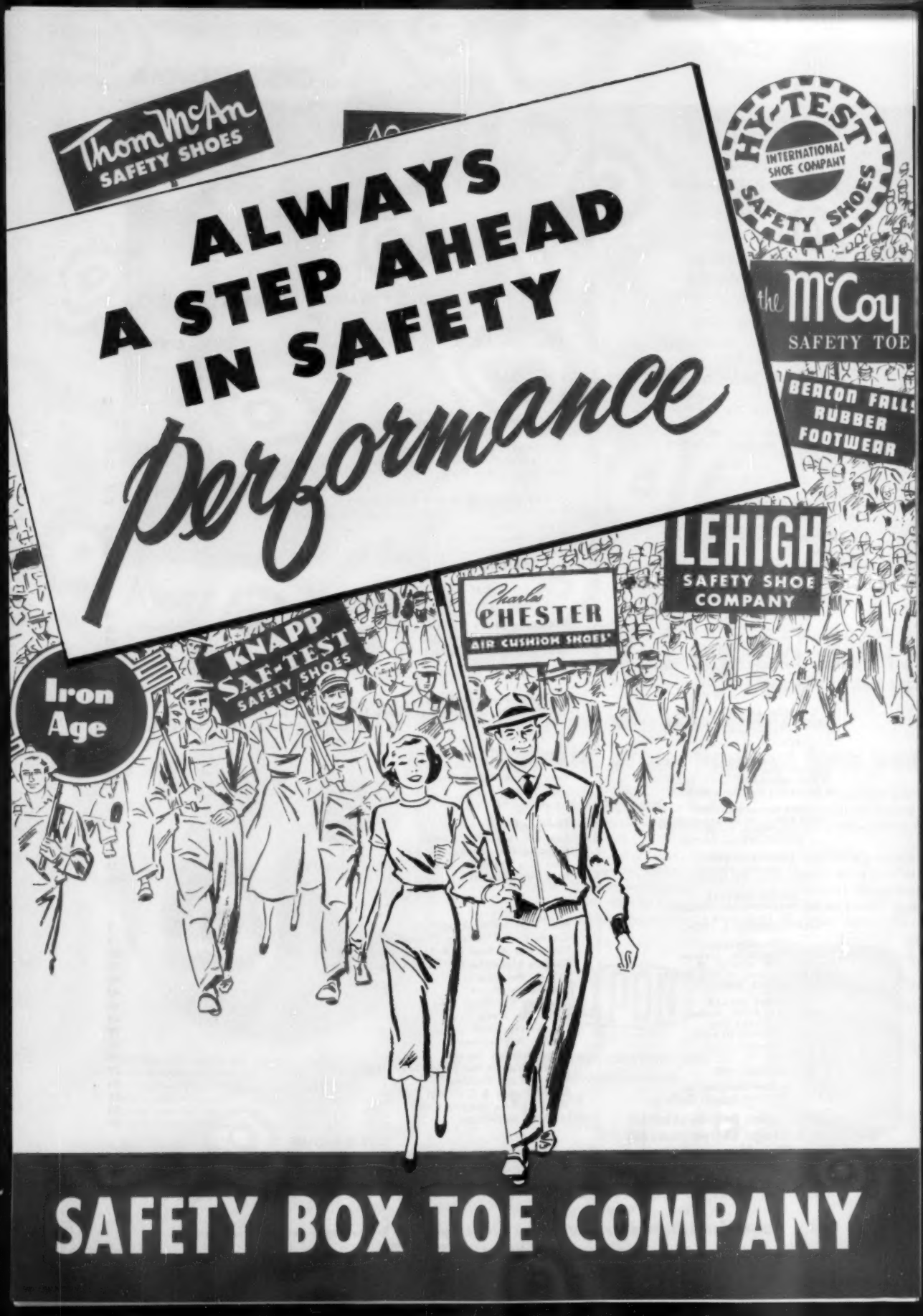
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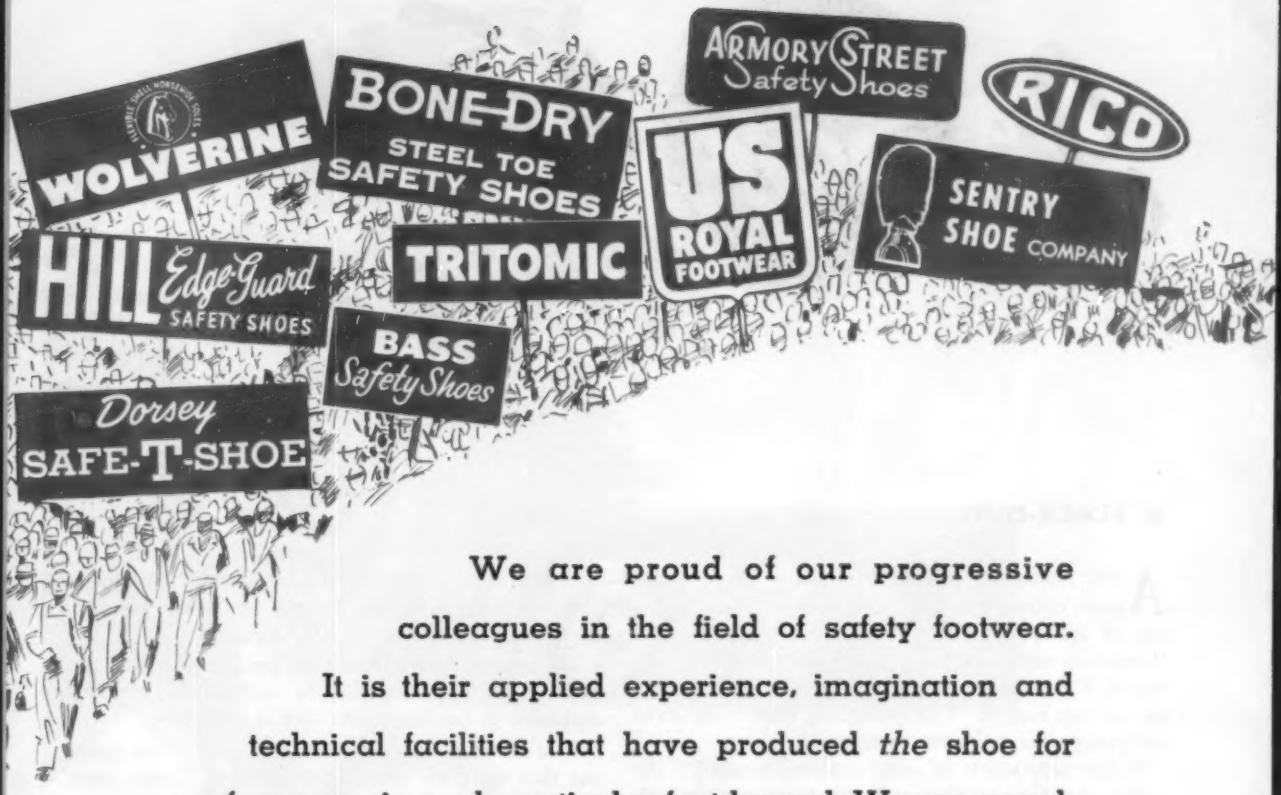

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It's Safe to Say

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★ BLACK-OUT! . . .

ANY review of accidents and their tragic results must include consideration of those who, by reason of age or some hidden physical condition, find themselves with slowed-down reflexes. The man who says at 50 that he is "the same as I was at 30" is fooling no one but himself. The succeeding years bring about an even greater and often more rapid change.

A case very much in point occurred recently. The editor of a long-established, reputable insurance publication suddenly blacked out and became involved in a serious automobile accident and awoke to find himself hospitalized with critical multiple injuries. Here we have a situation where, utterly without warning, the victim blacked out just a few seconds before a crash in a car hurtling along through a busy intersection with an unconscious driver at the wheel.

After miracles in surgery, the victim recovered and, with the wisdom that frequently comes with the years, later realized that at the age of 71 he had no business driving a car in a congested metropolitan area surrounding a big city. Nevertheless in far too many states there seems to be a policy of *laissez-faire* which indicates "once a driver, always a driver." The net result is that we have behind the wheels of high-powered motor vehicles the aged, the lame, the halt and tragically enough, even those with seriously impaired vision. They are permitted to renew driver's licenses time after time with no thought of physical check-up or any requirements of their respective states for periodic examinations to determine driver fitness.

In reporting his own accident, the victim stated that he recalled slowing down and moving over into the right-hand lane to make a right turn. He noted a peculiar reaction at the time in that the lines on the road, which he knew to be painted white, suddenly appeared to be black. He recalls a sensation of the car bouncing over the center strip and then an ornamental utility pole "coming at me so fast I couldn't stop."

Before lapsing into a merciful unconsciousness he remembers thinking that the end had come and then complete blackness.

Our contemporary reports no knowledge of any pre-existing physical condition to account for any susceptibility to fainting spells—but it happened.

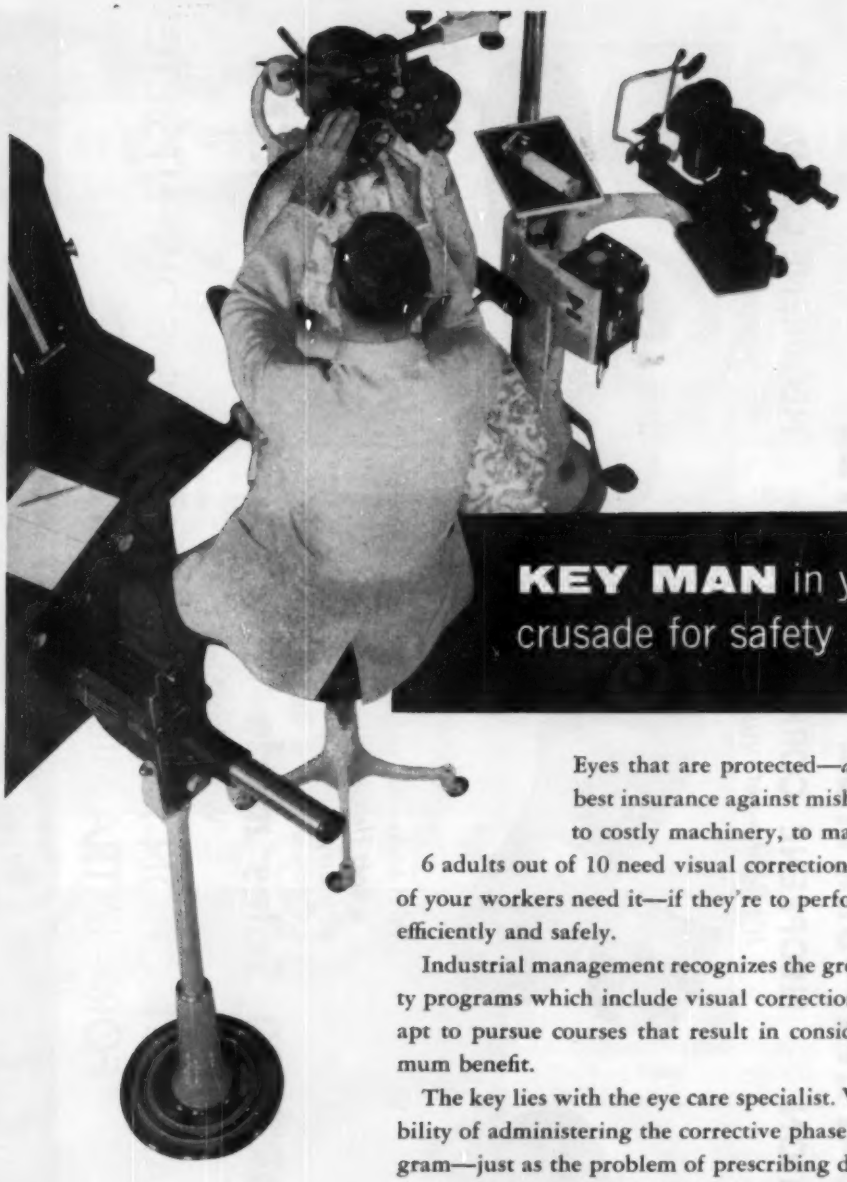
In a message to his own readers, the victim points out that there are probably millions of cardiac cases, diabetics and others driving cars at this moment to given instant. In addition, the factor of impaired given moment. In addition, the factor of impaired vision is also a corollary of oncoming years. In his reporter's report, the writer wisely suggests starting a movement voluntarily to give up driving unless very frequent physical examinations reveal no potential difficulty. Even then, there should be some age limit for drivers. "Much as I love to drive—to go places where I have never been before, I can never feel safe driving a car; I am 71 years old," the writer reports, "and shall not apply for renewal of my driver's license."

This publication joins with the victim, fortunately spared to continue his useful labors, in urging the passage of state laws throughout the country requiring a periodic physical examination with every application for license renewal. Even the very young can develop a physical condition which can menace themselves and other drivers and pedestrians.

There is no gainsaying the fact that if a lot of us would get off the roads, our street and highway toll would be reduced substantially.

Physical check-ups at intervals would be wise also for men in varying types of hazardous industrial jobs to remove them from harm's way *before* the horse is stolen, not afterward and at great expense to the community.

If railroad engineers must be examined frequently, why not—for example—crane operators? H.A.



KEY MAN in your crusade for safety

Eyes that are protected—*and see well, too*—are your best insurance against mishaps of all kinds: to worker, to costly machinery, to material.

6 adults out of 10 need visual correction of some sort. Just as many of your workers need it—if they're to perform their tasks comfortably, efficiently and safely.

Industrial management recognizes the great potentialities of eye safety programs which include visual correction. However, it sometimes is apt to pursue courses that result in considerably less than the maximum benefit.

The key lies with the eye care specialist. With him rests the responsibility of administering the corrective phase of an industrial vision program—just as the problem of prescribing drugs and other therapeutics lies with the professional in medicine.

A Bausch & Lomb representative may be of inestimable aid in the development of your own industrial vision program. He can help you in any phase: defining eye hazards, specifying protective equipment, establishing a full scale program employing the cooperation of eye care specialists in your area—for lowered costs, higher productivity, better employee relations as well as a distinguished safety record.

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"our most precious resources" . . .

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. . . and our Safety Program for them . . .

By JOHN S. BUGAS
Vice-President, Industrial Relations
Ford Motor Company
Dearborn, Michigan

IT IS A GREAT TEMPTATION to approach the problem of industrial safety from an economic angle. Competition means cost-consciousness. In a buyer's market, the business enterprise must operate at razor-sharp efficiency. Lost-time accidents can weaken its competitive position just as drastically as slipshod management or an inferior product.

However, I would like to suggest that ***humanitarian*** considerations must always over-ride the economic aspects of industrial safety. As Benson Ford has pointed out, "People are America's most precious resource." All of us at our company subscribe to that statement 100 percent.

Our safety program is cost-minded in that it seeks the most in accident prevention for each dollar spent, but it does not—and never will—attempt to put a price tag on the life or well-being of an employee. Our safety program is production-minded and recognizes that only high productivity and volume sales can keep the Company healthy and prosperous. But safety is not subordinate to production; it is an integral part of the productive process. We insist on production with safety, not at safety's expense.

Within this broad framework of social responsibility,

the American businessman appears to have made a good deal more progress in industrial safety than in other areas of safety. One good reason for this progress is that in a plant we can exercise a reasonable degree of control over working environment. Accidents on the farm, in the home and on the road occur under relatively uncontrolled circumstances. In some cases—week-end traffic, for example—conditions may approach anarchy.

Nevertheless, it seems to me that many of the lessons we have learned in industrial safety can profitably be applied in other areas. The same weapons and techniques which have cut plant accidents so dramatically in the past 20 years might well be used against accidents in general.

With that in mind, I'd like to describe briefly the over-all safety program we have at Ford Motor Company. We don't claim any great originality for it. As a matter of fact, about all we've done is to "codify" and lay down as "law" a number of practices—some new, some of long-standing—in the company. Probably many other firms have similar programs. But, in laying out our program, I can perhaps provide benchmarks against which to measure the performance and prospects of other safety programs.

The 14 Points

Our safety program at Ford has 14 points. Some explain themselves, and some require a little explanation.

Point One is to get management at all levels behind the safety effort. If the boss is for it, the men all down the line will soon get the idea. At our Buffalo stamping plant, for example, the plant manager himself is the company's most ardent and enthusiastic safety spokesman. When he has something to say, he not only addresses the day shift; he comes back to give the same safety message to the other two shifts. Our plant managers are required to keep in close touch with and give full support to the safety program.

Point Two calls for the active participation of supervisors. Part of each weekly management session in our plants must be devoted to safety, and supervisory safety committees are required to hold monthly meetings.

Point Three needs no comment: each manufacturing and assembly plant must have at least one full-time safety engineer.

Point Four is: Sell safety to new employees. Every new employee hears a talk on safety problems and regulations in his area of work. This talk is given usually by the safety engineer. The employee's immediate supervisor then gives him an on-the-spot run-down of the safety requirements for his particular job. We recommend also that plant managers send letters on the subject of safety to all new employees. Incidentally, a modified form of this procedure is used for employees returning to the job after a prolonged absence for any reason.

Point Five is to re-sell safety over and over. Each supervisor talks safety to at least one of his men every day. We've found from experience that these man-to-man talks are more effective and productive than group discussions. ***Safety becomes a personal matter*** between each employeee and his supervisor.

Point Six in our program doesn't seem to have much bearing on safety at first glance. It is this: Maintain firm plant discipline. The reasoning behind this is quite simple. A plant where discipline is lax cannot be a safe plant. Lack of discipline means lack of control, and without firm control any safety program is just meaningless talk and gesture. An employee should never be subjected to high-pressure safety campaigns of rigid discipline, followed by disastrous letdowns. Consistently firm and fair enforcement of safety—and all other rules is the key to an effective safety program.

Point Seven is to build safety into the job. This, of course, means tools and equipment designed and engineered to be safe, making personal protective equipment and detachable safety devices unnecessary. We feel—as many others do, too—that the standards set up by various safety engineering groups must be regarded as *minimum*. Our own requirements are frequently more rigid than these generally recognized standards.

Point Eight is related to number seven: get the safety engineer's approval on new equipment, machinery, layouts and design. The changes, guards or devices stipulated by the safety engineer must be completely installed before operations begin.

Paradoxically, we have found in recent years that eye injuries in manufacturing operations usually occur in areas where no eye-hazard is thought to exist. That is because the really hazardous jobs—spot-welding and grinding, for example—have had 100 percent protection for a long time.

Point Nine is that eye protection for employees and visitors must be afforded in all manufacturing areas of new plants. Some of the older plants present problems, but we are moving in the direction of complete eye protection in all plants.

Point Ten is the requirement that safety permits be issued to employees engaged in operations which might endanger others. One obvious example is the truck or tractor driver. In addition to his state license, the operator must have a company permit, and this involves passing a physical examination in addition to the usual technical requirements. Crane operators, railroad engineers and switchmen, and door-lifter and coke-pusher operators in the steel mill are examples of other occupational groups which must have safety permits. The issuance of these permits is the responsibility of our safety staff, on the request of supervision and with the approval of the medical section. The permits are not renewed automatically; holders must be re-examined at regular intervals.

It is pretty obvious that good plant housekeeping not only means economy and efficiency, but greater safety as well. *(Cont'd on page 26)*

Color guards this punch press with bright yellow over the flywheel guard. Arrows point to switchbox which is painted red for easy identification. Yellow also marks the magazine guard, while the rest of the press is colored an eye-resting share of green.

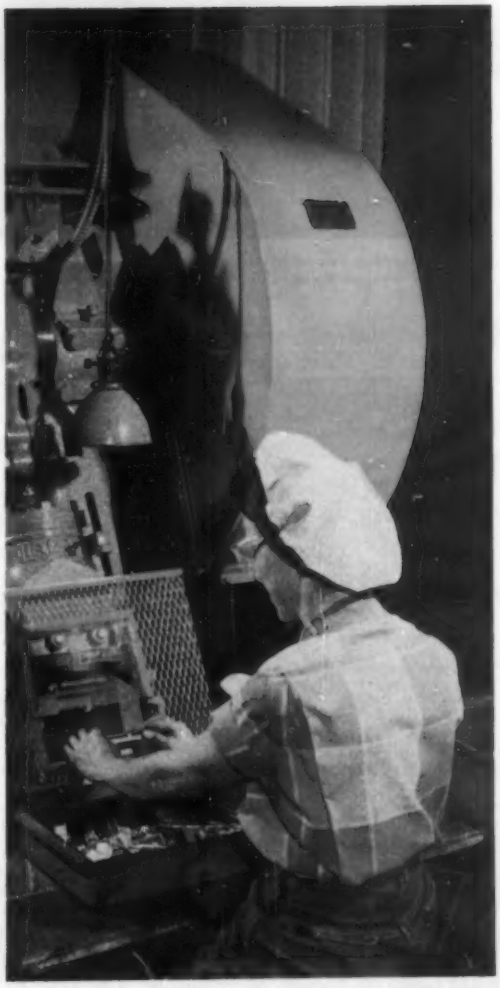
THE LOWEST ACCIDENT RATE of any comparable factory in the country is only one result of using color in its plant says the Master Lock Company of Milwaukee. Just as important is the 33 years of excellent employee relations, improved housekeeping and servicing methods, and streamlined production techniques.

Perhaps just as noteworthy is the fact that this homegrown program of color dynamics has stumped some experts, anticipated others, and violated most conventional factory practices. A look into the plant shows just how unique this color program really is.

Giant padlock making machines are painted in flamboyant brights to show dust and soot rather than hide them. Pipes and conduits, usually painted to blend unobtrusively into walls and ceilings, shout in iridescent greens and yellows. Pale pinks and deep wines, buffs and yellows, sea-foam greens and pastels of all shades are splashed about in a symphony of color covering nearly all of the 227 thousand-square foot plant.

The program is the outgrowth of an employee relations program uniquely geared to a single theme: Feminity. Sixty percent of the work force are women. But the all-pervading use of color at the plant has become a major tool of production, too, playing a sig-

(Continued on page 24)



Yellow is warning color here, so belt and flywheel guard and wire mesh cage are painted that color, while arrows indicate red around die.

We've lived . . .

with Color a long time

and liked it!

Man performing chipping operations shown here, has extra protection against flying chips in nose shield on safety glasses.

By COLE ALLEN *

AN EFFECTIVE

For such work as this, any worker needs both goggles and respirator for complete protection against dust and fumes.

KEYING THIS DISCUSSION TO THE "SMALL PLANT" is deliberate. There is preponderant evidence that the small plant has critical need for such a program. (Of course, the large plant which does not have such a program has similar need to recognize its eye hazard problem.)

There are varieties of statistical exhibits which seem to demonstrate that small plants produce the greatest frequency of occupational accidents—about 2 and a half times the frequency of large plants is the reported relative proportion. That large part of occupational mishaps that affect eyes, follows the same development pattern—the small plants produce them at a faster rate than do the large plants.

Regardless of how much basis there may be for debating the numerical accuracy of any set of statistics, I suggest that we accept as valid, these observations: small plants are producing a whole lot of eye injuries; they are producing more than expected in relation to the hazards and exposures in their plants; there is not much evidence that the small plants are doing anything about the matter; they ought to be doing something.

In order to avoid some of the controversy that usually develops when someone endeavors to define a small plant based on number of employees, I propose to concern myself with the type plant that is small by virtue of one-level management. It is a one-man management. The top man whether he carries the title owner, manager or superintendent, runs the whole show.

I don't believe we can separate eye accident prevention from the overall plant safety program. Practically every hazard produces injuries to the eyes under some combination of circumstances. Thus the basic strategy is to control hazards.

There is, of course, justification for treating the eye accident prevention program with special emphasis. Eye injuries are among the irreversible type injuries, and those in the more serious categories are dramatic. There usually comes a time when every plant needs to take stock of its eye injury situation and put its controls on

* Mr. Allen is a divisional engineering manager for a leading insurance company.

For the SMALL PLANT . . . EYE PROGRAM

Grinding machine operator in picture at right wears wide-vision "panoramic" goggles for his job. His is only one of many occupations which must have eye protection for the worker's safety.

a positive basis. Because of the prominence of inherent eye hazards in a plant's operations, the control of eye injuries may loom as the most important feature of the plant safety program.

A small-plant manager can utilize the wealth of published material on eye hazards and controls obtainable from outside sources to guide himself in the development of an effective program. The American Standards Association Code Z-2, National Safety Council Safe Practice Pamphlet #14, and Bureau of Standards, Handbook 24 are particularly good. Other sources of reference material are the National Society for the Prevention of Blindness, optical companies and insurance companies, to mention a few.

The combined respirator and hood worn here by a paint spray operator serves as protection for his eyes, nose and skin.

The survey can be made of plant processes, equipment and physical conditions to identify hazards that have a potentiality of eye injury. In addition to needing positive mechanical or structural corrections, these hazards may also make it advisable that some sort of eye protection be worn by exposed workers. The experienced surveyor will recognize readily where some shielding or enclosing all processes will reduce greatly, although not eliminate entirely, the need for eye protection by the workers.

STEPS OF GOOD EYE PROGRAM

1. *Survey of plant equipment and operations to identify the eye hazards.*
2. *Determination of methods of controlling eye hazards at source and requirements for personal eye protection.*
3. *Formulation of a plan (a) for continuing control of eye injuries by shielding, enclosing or otherwise safeguarding hazards and (b) for the use of eye protection.*
4. *Inauguration of the program.*
5. *Follow up of the program.*

The American Standards Association has identified 8 groups of processes or operations that require, not just eye protection, but eye protection of certain distinctive characteristics. While records verify that most compensable eye injuries occur when the eye is struck by some solid object, enough damage is caused by corrosive liquids and by harmful radiations to warrant particular attention to those sources of eye damage. (See table on next page).

The American Standards Association classifies the following sources of eye damage:

Group A. Processes where protection is required from relatively large flying objects. Examples are chipping, caulking, riveting and sledging where there is a likelihood of heavy impact from a large particle.

Group B. Processes where protection is required from dust and small flying particles. Operations involving scaling and grinding metals, stone dressing and some woodworking where moderate impact is likely are examples.

Group C. Operations where protection from dust or wind are required. Examples are truck driving in open cabs, electric spot and butt welding where there is no exposure to radiant energy.

Group D. Processes where protection from splashing metal is required such as babbitting, pouring of lead joints, metal casting, soldering, dipping in hot metal baths.

Group E. Processes where protection to eyes from gases, fumes and liquids is required such as handling of acids and caustics, plating, acid etching, etc.

Group F. Operations where protection from reflected light or glare is required. Examples are long exposure to snow covered ground, reflected sunlight from roofs and road beds.

Group G. Processes where protection from injurious radiant energy with a moderate reduction in intensity of the visible radiant energy is required. Examples are oxyacetylene and oxyhydrogen gas welding and cutting, electric furnaces, steel making furnaces, electric resistance welding, brazing.

Group H. Processes where protection is required from injurious radiant energy with a large reduction of the visible radiant energy. Examples are electric arc welding and cutting, ultraviolet light exposures, hydrogen welding.

The American Standards Code prescribes also the specific type protection that is effective for the exposures, which may be specific style goggles, helmets, shields, face masks or hoods.

There are many advocates for all-inclusive 100 percent goggle programs for the production areas of industrial plants. I believe this provides optimum protection and approaches the absolute in protection. It should be the ultimate of every industrial plant eye safety program. It is acknowledged that some phases of production activity are relatively less hazardous than others. However, when one considers the factors, extraordinary as they have been in many instances, that have produced permanent eye damage, it is doubtful that one could state with any validity that there is a production operation that is 100 percent free of eye hazards.

The conditions revealed by the plant survey may lend strong support to the enactment of a fully-protective goggle program. Certainly, if the operations expose the majority of the workers to eye injuries directly or indirectly, there is a logical basis for instituting such a goggle program initially, without a progressive build-up to full protection over a period of time. The strongest advocate of the 100 percent goggle program is the unfortunate who has lost his vision on one of the supposedly less hazardous work assignments.

The success of any goggle program in the small plant seems to depend largely on the self-discipline of workers. There is probably little direct supervision of plant activities, since so much of the employer's time is diverted to other functional activities. Yet, by having no intermediate supervisory level, the employer is usually in closer personal relationship with his workers and in a position to gain the benefit from any leadership ability he may exert.

With the hazard survey completed, the operations needing eye protection identified, and the approved type of protective equipment determined, the employer is ready to plan the details of his program.

It would be well at this stage to invite contributions by employees. Employees selected could very well be senior workers, influential and respected workers and the shop steward, if the plant is unionized. The value of such employee participation in the planning will be in greater evidence when the program is launched. Where the workers have had a part in the formulation of the plan, they are more ready to accept the program and to cooperate for its success.

The broader the base on which the program is erected, the sounder the program will be. It is equally

Goggles and safety clothing are necessary protection from the splashing of molten metal being poured in this picture.

as important that all facets of the program be identified with recognized principles of good organization and management. This gives the program a purpose and a validity.

The detailed planning needs to include:

1. Decision on the adoption of standards for the processes and equipment which have the necessary safeguarding of inherent hazards built in to control eye injuries at their source. In other words, make the job safe in the one best way.

2. Decision on the institution of plant maintenance and systematic inspection procedures as a control to assure

Safety glasses shown here provide protection for riveter against flying metal chips, an important hazard as he goes about his work.

that processes and equipment function are at all times consistent with the predetermined standards.

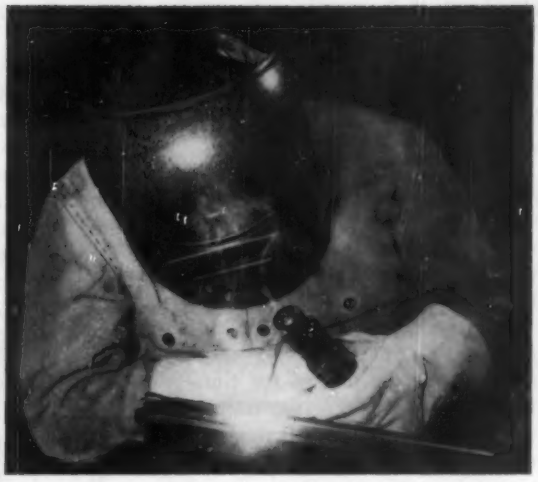
3. Decision whether to enact a 100 percent goggle program or a selective program.

4. Decision on the enforcement of the program, whether it is to be optional or mandatory. If the program is worth adopting it should be applied without exception. Consequently mandatory use of eye protection brings the best results. If the employees are unionized, union support of the program is most desirable and can usually be obtained. The better the employer is able to convince workers of the wisdom of the program, the less problem there is to enforcement.

5. Decision as to the most suitably designed personal protective equipment and where to procure it.

6. Decision on the need and arranging for prescription lens goggles for those workers requiring such special features. It has been estimated that approximately 70 percent of workers may be found in this category.

7. Decision whether to use optometrists and ophthalmologists as staff consultants for professional assistance



Welder with safety helmet and built-in, anti-glare goggles is adequately protected against all the serious eye hazards of his job.

in choosing, fitting, servicing goggles and in prescribing lenses. The employer would do well to use them.

8. Decision whether management bears the full cost of the eye protection equipment, shares the cost with the worker or passes the full cost on to the worker. Best results seem to develop where management assumes full cost. It involves less complication in bookkeeping and in relationships.

9. Decision on maintenance plan for goggles which includes systematic cleaning, sterilization, inspection, repair and replacement. It also includes schedule of re-examination of eyes of workers requiring prescription lenses and correcting when necessary.

10. Decision on control procedures to measure accomplishments and to improve program by using records of all eye injuries, investigation of causes of such injuries, and establishment of safeguards against recurrences of injuries. If the program is effective there should be very little additional work load created by this function.

11. Decision on establishing and maintaining appropriate first-aid and emergency care for injured eyes. The ophthalmologist or physician, to whom plant eye injuries are referred can assist in setting up this control against aggravated damage to the eye from the mishandling of first-aid by inept persons.

12. Decision on method of launching the eye protection program to achieve maximum acceptance and cooperation from the workers. This might consider advance notices in the form of a letter to each employee, a pay envelope insert notice, a propaganda spread of appropriate safety posters and notices on bulletin boards, a safety rally of all workers as the jump-off, with an inspirational shove by a speaker from the outside or an appropriate film. Such an employee stimulus should not be a one-shot proposition. In line with management's interest in constantly increasing the personal

(Continued on page 56)

Life With Color

(Continued from page 19)

nificant role in everything from plant maintenance and safety to department identification.

In 1937, when color dynamics was just entering the industrial field, a number of company engineers were sent on tour to various plants throughout the country to "see what this color business is all about."

They were particularly interested in color's psychological implications and the promise it held for eliminating the dreary "factory-ish" atmosphere seemingly inherent in manufacturing. The creation of cheerful working conditions is always a weighty concern for factory management. When your work force is composed mostly of women, it becomes a top priority matter.

The "task force" of engineers came back with mixed reports. Some of what they saw looked good, but not all. The group experimented with colors and shadings, modified what others were doing, started out on some new approaches.

For example, they were among the first to experiment with yellow as a danger color, in place of red. Some of their findings modified safety standards set by city and state codes and by insurance companies.

Two standards were used in determining the efficiency of a particular color or color combination:

1. How the worker reacted directly. The girls were asked their opinions, with changes made according to what they liked or didn't like.

2. How the worker reacted indirectly. Careful records were kept to see how the worker production varied with the color experiments.

The engineers worked with several paint manufacturers to develop their own color tones and shadings. Not only the psychological effects were tested, but also, from a practical point of view, the wearability of the color. In the early stages, for instance, they tried soft tone blues on the machines. They found however, that the combination of this shade and the hum of the machines had a drowsing effect on the girls. What finally developed was an eyerest green for the machinery with buff and yellow to point up guards and other units.

Unlike other factories where machines are painted in dark shades so the dirt won't show, the company uses bright tones—to make dirt stand out. The reason: "If they see the dirt, they'll clean it." And they do. The plant is immaculately clean —although there is no company rule requiring girls to play housekeepers.

"Pastels," Said Girls

Interestingly enough, the extensive use of pastels was the unconscious selection of the girls. Trial and error with various colors disclosed an objection of the women to strong, domineering colors. The soft, delicate pastels were found to be more appealing, less disquieting. By the same token, the company has found that pinks and reds (at least in pastel shades) are not as psychologically upsetting as many authorities claim. They are used repeatedly to break up and highlight solid color combinations. For example, reds on light switches break up the wall monotony.

Similarly, pipes and conduits are painted in contrasting colors to make them stand out from walls and ceilings. Not only does the color break up the color scheme, but it makes the piping easier to detect for servicing. Furthermore, color serves as a coding system. Thus, a steam pipe is distinguished immediately by its color from an air pipe line, an electrical conduit from a heating duct, and so on.

Color also serves a valuable purpose in production. Each department has its own code color which is used on all of its equipment and production charts. This accomplishes 3 things:

1. It enables a foreman or worker anywhere in the plant to look at the containers in which a production piece is carried and tell exactly what stage of production that piece is in.

2. The system makes it possible to identify sizes and production steps within a section.

3. Colored waste baskets, tools, chairs, etc., tend to stay in their own departments, making inventories easier.

Toujours Gai

The color-for-housekeeping idea is also carried into employees' locker and wash rooms. Gay colors in these rooms keep the workers in a pleasant frame of mind before and after work.

Perhaps the apex of color harmonies at Master Lock has been achieved in its lunch room of chartreuses, yellows, and iridescent green with matching and contrasting tables. Opened only a short time ago, it was hardly ever used by the workers until management discovered that the employees thought it was intended only for company executives!

"Employees spend the most important part of their lives here," a company official has said. "We feel it our duty to make our plant a 'home away from home' for them. Cheerful surroundings mean a lot, and color looks like a good way to achieve it."

Pictures by courtesy of Master Lock Co.

Color Code Cuts Accidents

ACCIDENTS are few and far between in the field maintenance shop shown in the picture above. Safety-conscious personnel of the Corps of Engineers of the U. S. Army employ the "color-dynamics" principle at the Yuma, Arizona base. Here, a civilian shop foreman operates a power lathe with color-coded controls to facilitate faster, safer operation. All power tools in the shop are marked in this same way. Safety lines and danger areas are also marked by color.

Picture by courtesy of Corps of Engineers, U. S. Army.

A Sanitation Man's Nightmare

By JOHN J. DONAHUE
Supervisor, Plant Sanitation Section
Technical Facilities & Services
Research Laboratories Division
General Motors Corporation

THE HUGE GENERAL Motors Technical Center is located over 800 acres in Warren, Michigan. Eventually, it will be the workshop for more than 3500 engineers, researchers, stylists, designers, mechanics and other specialists designed to better the corporation's products, make them cheaper, and keep them up to date or ahead of the field.

Upon completion, this giant center will embrace 25 buildings, from gatehouses to large laboratory, office and shop buildings. The maintenance of much of this is the job of the plant sanitation section. It is a large and important task, concerned with the health, safety, welfare and morale of all our employees. We are at present maintaining about 500 thousand square feet, and expect to increase this to 750 thousand upon full occupancy. Our total cost for plant sanitation last year was $213,518.08 or 43 cents a square foot. We hope this year to cut that cost, through the use of better materials and new methods.

Our work is cut out for us and the responsibility rests with those assigned to it, for our function is direct and centralized. Here are some of our duties and how we accomplish them.

Our present staff consists of 4 foremen and 61 wage employees. Nineteen on the day shift are supervised by one foreman, while 42 on the night shift get their orders from the remaining foremen. Naturally, the latter shift is the one on which most of our work is performed. All janitors are trained on the job. This method, while satisfactory, leaves something to be desired. We have hopes of changing this procedure to include classes and training films later.

We have several pieces of mechanical equipment—one 36-inch power sweeper and one 37-inch autoscrubber. They sweep and scrub about 40 thousand square feet in an 8-hour shift. We also have disc polishing and scrubbing machines, and wet and dry vacuums. We are trying to standardize on this type of equipment.

A wall washing machine, operated by a single janitor washes 1500 to 2000 square feet per 8-hour shift. We share the window washing load with another section, but we wash all glass partitions. All lighting fixtures are washed two times a year and lamps are group replaced once each year. Spot replacements are made once a week. We also replace refillable dry type building air conditioning filters.

Most of our supplies are purchased on company specifications or direct from manufacturers offering contract prices. When the supplies are received, they are checked by our day shift stock room attendant. This attendant also has the job of checking the various service rooms each day to see what supplies have been used since the preceding day and replenishing stock that is low.

The start, finish and consumed time of all project work is recorded. All materials used and labor expended are recorded and a report filed at the end of each month. This provides us with a check rein and serves to keep us cost conscious. In addition, any excessive costs spur us to study the task for ways of

eliminating lost motion. Once the quality level of any job has been set, it is the responsibility of the respective foreman and myself to inspect areas and work underway to be sure of the maintenance of our quality level. A file is also kept on all sample or test materials which help us determine the material we are to use in the future.

Our Problems

As examples of the sort of problems we have, let me describe what is done in three buildings we maintain.

The Research Manufacturing Building is occupied by the Process Department and its related sections, such as Heat Treat, Welding Sheet Metal, and Pattern Shops. It also houses the research experimental garage, Plating Department, Special Problems Department, Shipping and Receiving, Instrumentation and Technical Facilities, Services Offices and the Cold Room. In this building we have over 130 thousand square feet of maple flooring which varies in lengths of 6, 9 and 12 inches. It is 2 inches thick and laid in mastic. The floor is finished with an emulsion type penetrating seal over which we place two coats of a fast dry (35 percent solids) surface seal which impart a high gloss. This floor has never had any water on it except spillage. It is dust mopped daily with a treated mop. It is cleaned with an emulsion seal and steel wool pads underneath a disc machine. Afterwards it is allowed to dry 2 or 3 hours before the surface seal is reapplied.

In the high bay area of the Engineering Research Building we have 10 thousand square feet of end grain yellow pine flooring which is finished in the same manner as the maple flooring. This floor was recently refinished by stripping the application of a penetrating sealer and two coats of surface seal. This was necessary because it was improperly finished by the flooring contractor who applied a paste wood filler instead of a liquid filler. This caused the surface seal to blister and peel. Prior to stripping we attempted to get bids on sanding of this floor and the best price obtained was 18 cents per square foot, sanded but not finished. Our janitors stripped this floor using a seal and varnish stripper, applied penetrating and two coats of surface seal at a total cost of 14 cents a square foot.

On our resilient flooring a program has been set up to provide for stripping every four to six months. It has been proven that more floors have been washed away than walked away. After trying several water waxes, we turned to the synthetic type floor materials, after learning that they required less buffing.

We have still a long way to go in plant sanitation. Many new techniques and materials are still needed, but we feel our sights are set in the right direction to overcome our maintenance man's nightmare!

From an address delivered at the 6th Plant Maintenance & Engineering Conference.

Our Precious Resources

(Continued from page 18)

Point Eleven for that reason calls for planned and thorough housekeeping practices.

Point Twelve calls for a comprehensive inspection system, ranging all the way from our central safety staff, which makes general reviews of the program, down to the man on the job, who is expected to keep a careful eye on his tools or equipment at all times and to report potential hazards at once.

Since superstition has no place in a safety program, I have no hesitation in offering:

Point Thirteen. It is the requirement that all accidents be promptly reported. This is not so we can show how good—or how bad—we are through accident-rate statistics. We do it so that we can take swift action to clear up real or potential trouble spots. The incidence of certain types of accidents, the plant areas where they occur, the kinds of jobs on which accidents occur, all help to provide us with a sensitive safety barometer. And unlike the conventional weather barometer, they give us information we are able to do something about. Given accurate information, we can make our own safety climate.

Point Fourteen is publicity: we try to talk safety through all the media at our command. Safety posters and displays, both simple and elaborate, are used to good effect. Such devices as the "days-without-a-lost-time-accident" board help to arouse employee interest and enthusiasm. Plant newspapers are extensively used. At Ford each issue of every employee newspaper—and we have 30 of them—contains at least one article on safety. There are also many excellent motion pictures on safety which are widely and effectively used.

So much for our 14-Point Safety Program. I imagine many of the points sound very familiar. Since they may be regarded as our common property in the field of industrial safety, I urge that we think them over carefully with a view to seeing whether many of them might not be equally or partially adaptable to other safety areas.

Pictures by courtesy of Ford Motor Co.
From an address delivered before the Detroit Industrial Safety Council.

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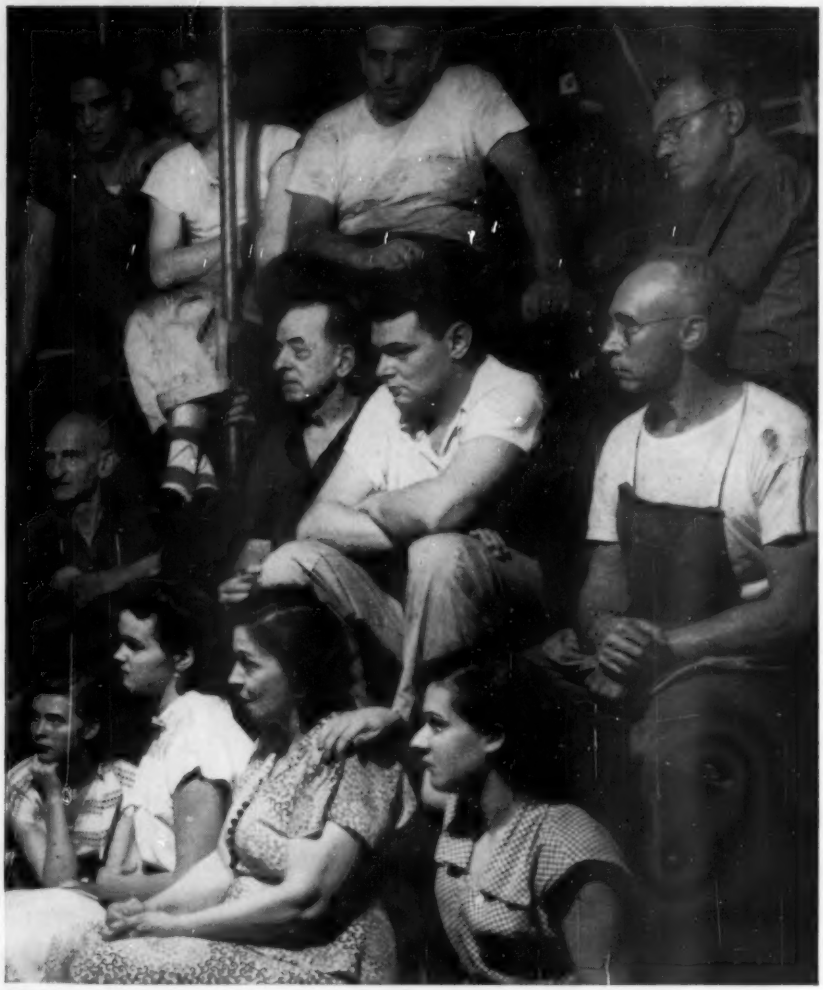
When tired it's **PLAIN HORSE SENSE** *to*

STOP FOR A REST

or you'll **REST FOREVER!**



the facts of life

about cancer

The facts of death from cancer are all too familiar. Too many have known the tragedy of losing a family member... a friend... a fellow worker. Too few know the facts of life about cancer. Yet they are there for the asking... or the seeing... or the listening. The American Cancer Society teaches life-saving facts about cancer every day of the year. Through films... pamphlets... exhibits... window displays... via radio... television... newspapers... magazines... from lecturers... information centers... you can learn vital facts that might one day mean the difference between life and death.

The American Cancer Society maintains the first line of defense in the battle against man's cruelest enemy. Teaching you how to protect yourself and your loved ones from death by cancer, supporting research in more than 100 medical and scientific centers, keeping your doctor informed of new techniques of diagnosis and treatment are but a few of the Society's many functions, all of them directed to the ultimate conquest of the disease.

Don't turn away from the facts about cancer. They can be the facts of life for you and your family. Visit the American Cancer Society office nearest you, or write to "Cancer" in care of your local Post Office.

American Cancer Society

Another
Safety Maintenance FIRST

New York Port Authority worker is shown in photograph at left using new saw guard in one of the municipality owned shops.

A New Approach

TO SAW GUARDING

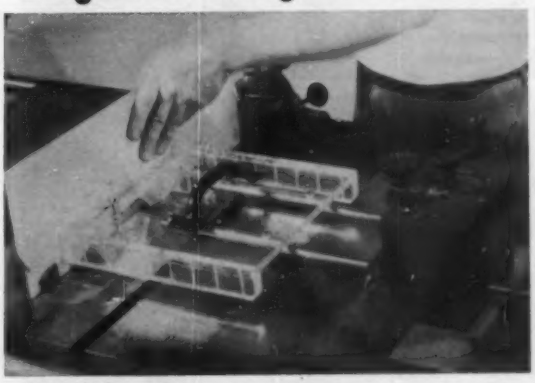
THE VERY IDEA of letting a blind man operate a circular saw would give most safety engineers and safety directors nightmares. Yet, with careful training and precautions and almost superhuman patience, the blind can be taught to perform some of the simpler table saw operations. However, many of the headaches and heartaches in this difficult training may be dispelled by a new type of woodworking saw guard. In fact, the guard is already being used in vocational training schools for the blind.

Of course, it isn't necessary to cite such an extreme example as that of the blind man operating a circular saw to indicate the need for guards. The inherent dangers of working in close proximity to a sharp edged saw revolving at high speed are all too obvious. That these dangers have been recognized is evident in the safety codes and rules drawn up by insurance companies, governmental agencies and the American Standards Association. These regulations have accomplished a great deal in making circular saws a safer production tool.

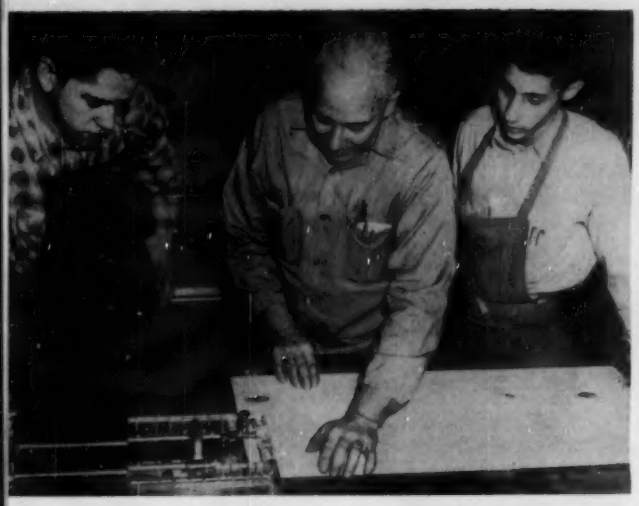
Despite these advances, however, the problems have not been wholly solved. The wood products indus-

Guarded: even problem jobs!

Diagonal sawing: Guard can perform this from several positions.



Rabbeting: Shield presses stock against rip fence as combination guard-guide.

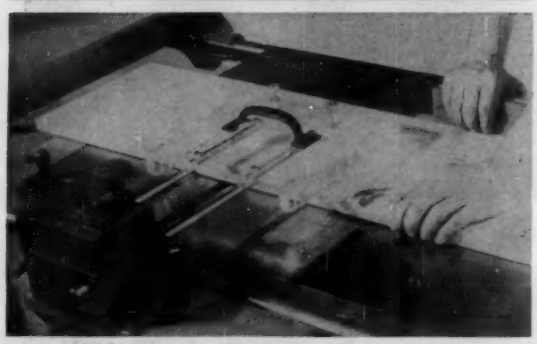


Frank Bretthauer, inventor of new guard, shows students at Chelsea Vocational High School in New York City how to cross-cut wide boards with the guard. It was at this high school 3 and a half years ago that Mr. Bretthauer started his project. Plastic guard can be used on many table-saw operations to conquer saw hazards.

Different Jobs: different guard positions

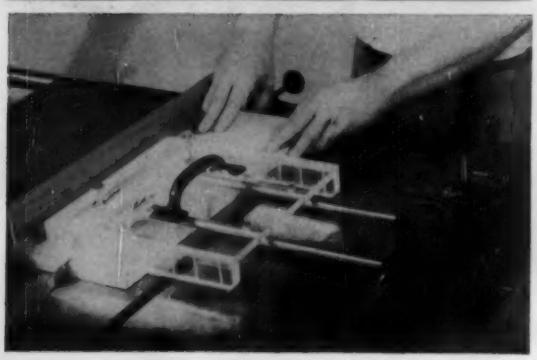
POSITION 1

Clear plastic guard can be operated from any of 3 positions, or for angled work. Short crosscutting, shown here, can be done in other 2 positions shown below. Work can be seen at all times through the guard itself.



POSITION 2

Long crosscutting in position shown at the left, is only one of many power table saw operations which can be done with protection from this guard. Guard is set to just clear the stock in this type of saw operation.



POSITION 3

Ripping, which can also be done in position 1, is pictured at left. Clear plastic guard can also be used as a pressure plate for angular work, besides guarding of most operations in its normal positions.

try still continues to have one of the higher accident rates. Furthermore, the use of the table saw is not confined to just that industry alone. A very large percentage of the factories in this country, no matter what their final product may be, use table saws in their carpentry or maintenance departments, even if not in the production departments. How many more accidents can be charged to these saws that are outside the wood products industry? How well supervised and guarded are these saws, that are really just on the sidelines?

And now we have the do-it-yourself craze sweeping the country. How many junior-size table saws are there in home basements and garages? And what sort of guards do they have? It is no wonder that both industry and insurance companies are taking an increasing interest in off-the-job accidents which can keep a man off the production line just as effectively as an on-job mishap.

Present Guards

Most of the guards now in use on table saws are metal hoods that enclose the saw blade and ride on top of the stock as it is cut. When used, they have been successful in lowering the accident rate by preventing contact with the blade and by containing flying splinters or broken saw teeth.

The installation of these metal hoods was necessary for the safety of the operator; but a certain amount of production efficiency had to be sacrificed for safety. The metal hood made it impossible to see the actual sawing operation. Some types were mounted so that the guard could be lifted up to permit inspection or adjustment of the saw blade, but for some operations such as rabbeting and dadoing the guard interfered with the work and had to be removed entirely.

Human nature being what it is, there is a tendency for operators, over a period of time, to become careless about putting the guard back on after it has been removed

for some operation on which it could not be used. The temptation, then, is to leave the guard off entirely. There is also the psychological factor that a guard which can be used only part of the time begins to lose its importance in the mind of the operator. So again he is tempted to dispense with the guard.

New Approach

One answer to the mechanical and psychological problems of guarding a circular saw is the new safety guard developed by Frank Bretthauer, an instructor at Chelsea Vocational High School in New York City. It is a challenging approach because it takes advantage of one of the weaknesses in the use of former metal hoods: it makes the guard so easy to move that the operator is encouraged rather than discouraged to change it from one position to another. He gets into the habit of using it because it guards and assists him on all table saw operations.

Basically, the new guard seeks to accomplish three things: 1. To be suitable for practically all operations on a circular table saw; 2. To be easy to install and use; and 3. To permit the operator actually to view the sawing operation. These goals are in addition, of course, to the traditional safety features of preventing contact with the blade and of shielding the operator from flying splinters and broken saw teeth. It has already been approved by state industrial approval boards.

The new guard * protects the operator not only in such operations as ripping, plowing, short crosscutting, long crosscutting and mitering, but also in work that has been difficult or virtually impossible to guard, such as plowing, rabbeting, tenoning, drop sawing, diagonal sawing, tonguing, template cutting and feathering. This versatility is made possible because this unique guard is designed for use in three different positions on the table and can be easily changed

* A source for further information concerning this guard can be obtained on inquiry to the Editor.

Scott Air-Paks
Cut Repair and Maintenance Costs, Safely!

SAVED from Complete Plant Evacuation and Production Shut-Down

• This manufacturer of a chemical product had too many costly experiences resulting from leaks of ammonia and chlorine. It meant complete evacuation of personnel, opening windows to lower gas concentrations and prolonged attempts to fix the leaks by workers wearing inadequate cannister masks. Repair work was painfully slow because repairmen had to make frequent trips to windows for fresh air. It was a costly procedure.

Now — equipped with Scott Air-Paks, repairmen are able to make quick repairs with complete breathing safety. Evacuation of personnel is unnecessary. Result: no lost time — no production losses. The Scott Air-Paks have paid for themselves many times over!

Do you have a similar problem? Then write for the free booklet "Scott Air-Paks Save Money, Man Hours and Men for Industry."

On Hazardous Jobs Scott Air-Paks Help Management and Labor Breathe Easier

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217 ERIE STREET LANCASTER, N. Y.

Canada: Safety Supply Co., Toronto — Branches in principal cities
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(For details, use Key # D-15 on card on page 85)

from one position to another. Materials which combine strength with lightness in weight are used in place of the heavy metal that made former hoods cumbersome to remove and replace.

The shielding guard itself is shaped like a shallow box over the saw and is made of ½ inch thick transparent plastic such as is used in aircraft construction. This clear plastic hood allows full visibility of the work at all times. Instead of being attached directly behind the saw, it is held in place over the saw blade by means of two steel rods that extend out from an adjustable mounting base at the edge of the table. As noted previously, this cast aluminum base can be positioned on three sides of the table and is held in place by two lugs and a threaded spindle that are inserted in three holes drilled in the table. If the operator wishes to adjust the shield, the base does not have to be removed.

The plastic shield and its supporting rods can be adjusted horizontally from the mounting base or vertically from the table. It can be locked rigidly in place over the saw so that it clears the stock or it can be adjusted to exert either sidewise or downward pressure on the stock. This latter feature helps hold the stock in place during some types of operations and helps prevent kickback of the material. As a further antidote for kickback, the plastic shield has a kickback plate with an adjusting pin to regulate the height of the bottom dogs. If a stop pin is needed for cutting pieces to the same length, an 8d nail can be inserted in one of the several holes along each side of the plastic hood.

The whole guard has been designed to hold the shield rigidly in place. If jammed stock, a broken saw or some other excessive upward pressure should be made against the hood, the force of the pressure might damage the guard. As a safety device, therefore, a brass bushing on the height-adjusting spindle provides relief against excessive pressure.

The patented guard has been developed after three and a half years of experimentation. It is available commercially for saws ranging from 6 to 16 inches in blade diameter. The manufacturer states that the device has been approved by the New York State Department of Labor, Board of Standards and Appeals and the Oregon Industrial Accident Commission and approved for use in military installations and government agencies. It has undergone extensive field testing in industry with, to quote one user, "entirely satisfactory" results. It is being used in vocational high schools and in schools for the blind.

Maybe the blind can't see, but this guard is helping even them to saw safely.

Top picture on first page of article by courtesy of The Port of New York Authority.

Compensation Laws

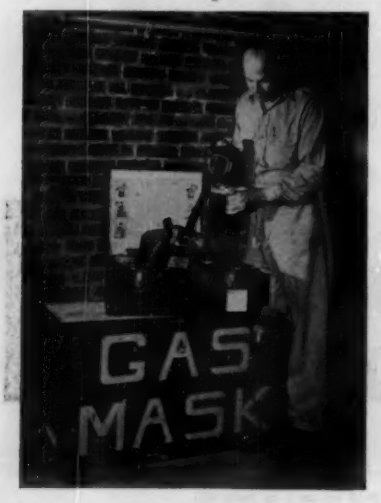
THE LATEST publication summarizing State workmen's compensation laws has just been released. Bulletin No. 161, "State Workmen's Compensation Laws As of September 1954," is now available from the Bureau of Labor Standards, U. S. Department of Labor.

This bulletin is a revision of Bulletin 125 published in 1950. It presents the major provisions of State workmen's compensation laws and contains tables comparing various provisions in the State laws, including the type of law, occupational disease coverage, waiting period, and different types of benefits. This bulletin is a handy reference for legislators, administrators, insurance carriers, labor and employer groups, and others.

Single copies of this bulletin may be obtained from the Bureau of Labor Standards, U. S. Department of Labor, Washington 25, D. C. Sales copies are available from the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C., for 25 cents each. A discount of 25 percent is allowed on orders of 100 or more. Remittance should accompany the order for sales copies and should be mailed directly to the Superintendent of Documents.

"Safety Maintenance" Salutes A SAFETY IDEA

Sudden Need . . . Labeled Safety Equipment Easily Seen . . .



EASY IDENTIFICATION of safety equipment eliminates much of the confusion that results when unexpected hazards pop up in industrial operations. No one has time to stop and figure out where the equipment is . . . indeed, they probably don't even have time to look very far. The stored equipment must be instantly identifiable.

To put the correct safety unit in the hands of emergency workers in a matter of minutes, Monsanto Chemical Company uses large block lettering on chests containing special equipment. Here an employee has just removed a self-contained breathing apparatus from a plainly labelled storage unit. Chest also holds 3 spare cannisters.

Picture by courtesy of Mine Safety Appliances Co.

Stonehouse SIGNS

FOR INDUSTRIAL ACCIDENT PREVENTION

Most people sometimes forget—and it's a dangerous oversight to forget Safety. "I forgot" is an all too common alibi for an accident.

STONEHOUSE SIGNS

To help workers *remember*, post Stonehouse Safety Slogans and Reminders signs. Just the few words on any of them help to promote safety.

The tendency to forget should not be overlooked—it's serious. Teach your workers to cultivate the practice of safety by reminding them to *remember* its blessings.

Have you our Catalog? 64 pages, in full color. It's free on request.

Stonehouse

SIGNS, inc. MANUFACTURERS • Stonehouse Bldg., 9th at Larimer

"Signs Since 1863"

Denver 4, Colorado

ACCIDENT PREVENTION • *steel* SIGNS IN STANDARD COLORS AND DESIGNS

(For details, use Key # D-13 on card on page 85)

Best Safety Year

FEWER PERSONS were killed in the course of their employment during 1954 than in any of the 18 years for which records are available, Secretary of Labor James P. Mitchell has announced. Bureau of Labor Statistics estimates placed the work-death total for 1954 at 14,000, a drop of 7 percent from the 15,000 workers killed in 1953.

The total of all disabling work-injuries also dropped sharply, down to 1,860,000—9 percent below 1953 and the lowest total in 15 years.

"In large measure," the Secretary commented, "these reductions in the volume of work injuries reflect advances in safety achieved through the cooperative efforts of employers and their employees. All participants in the safety movement shared in this favorable accomplishment."

The Secretary pointed out, however, that not all of the reduced volume of injuries in 1954 can be attributed to advances in safety. "An appreciable part of this reduction from 1953 to 1954 can be traced to declines in employment and shortened working hours. These contributing factors, however, do not detract from the commendation rightfully due to the safety movement for its 1954 achievements.

"Despite these encouraging improvements, the 1954 record still presents a serious humanitarian and economic challenge—14,000 workers died from work injuries during the year; 76,000 experienced some degree of permanent physical impairment; and 1,770,000 suffered injuries which incapacitated each of them for a full day or more. No accurate estimate of the total losses resulting from these injuries is possible. The injured workers, however, amassed a total of about 38,000,000 man-days of disability during 1954. Continuing disabilities from these same injuries in future years will ultimately raise this total to approximately 190,000,000 man-days. Our sense of achievement must be tempered by the realization that accident prevention has still a long way to go.

"Although the degree of improvement varied widely in different areas of employment, it is encouraging to note that there was some reduction in injury volume during 1954 in each of the 8 major industry classifications for which estimates were prepared."

In manufacturing the total of 390,000 disabling injuries represented a 19 percent drop from the previous year. In contract construction and in trade, the injury totals dropped 9 percent and 6 percent respectively. Mining continued its previous trend with a 15 percent decline in injuries. In public utility operations injuries were down 5 percent. In transportation employment, the volume of injuries dropped 10 percent. Somewhat smaller reductions occurred in agriculture, and in the finance, service, government, and miscellaneous classifications.

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won't rust • rot • splinter • warp • spark or burn!

To change from an extension to an A Ladder—pull the bottom fly section from the butt ladder.

This 2 in 1 ladder incorporates the outstanding advantages of high tensile strength aluminum and exclusive ALCO-LITE construction. It is strong, easy to lift and handle, and will give many years of maintenance-free service. Built for rugged use, the heavy 1" tubular aluminum, corrugated rungs won't turn, twist or break off. ALCO-LITE Ladders more than meet the rigid code and tests of the ASA and Metal Ladders Association.

extended lengths — 21' to 29'
weights — 52 lbs. to 67 lbs.

WILL NOT CLOSE IN USE
An automatic locking device in the top of the ladder prevents the A Ladder from closing in use.

STORES EASILY.
The adjustable, rubber tipped outriggers that stabilize the A Ladder retract into the side rails for easy storage.

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Please send me further information about the CAE and other ALCO-LITE Aluminum Ladders.

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COMPANY _____
ADDRESS _____
CITY _____ STATE _____

(For details, use Key # D-47 on card on page 85)

KEEPING UP WITH...

Recent Developments in Foot Protection

FOOT PROTECTION SERIES
other articles in February and March

NEOPRENE CUSHION SOLE

ATTENTION is being given increasingly to worker comfort in footwear and one of the most recent trends is toward soles that are lighter in weight but still provide long wear and safety. One of the introductions of the Quabaug Rubber Co. is a Neoprene Cellular Cushion Sole that is light enough to float in water and, with its thousands of tiny cells, effectively absorbs shock and cushions the foot. Made from DuPont Neoprene, the material is designed to combat an industrial sole's worst enemies: heat, oil, grease, solvents, many chemicals and abrasion. With a sole that offers all-day foot comfort, general fatigue which becomes a safety hazard to personnel is greatly lessened. The soles are available in brown or black, 18 and 21 iron, with crepe or suede face.

For details, use Key # FP-1 on Inquiry Card on page 85.

FOOT IRON

A NEW SAFETY aid of interest to any trade in which earth is turned by hand is the Atlas Foot Iron, which is designed to protect both the shoe sole and foot of the user against the edge of a spade or shovel. The iron prevents foot injuries and broken shoe shanks, while making it possible to use greater force in digging.

Manufactured by the Atlas Foot Iron Company, the device is made of 12 guage cold rolled steel. It is available in one universal size to fit any shoe.

For details, use Key # FP-2 on Inquiry Card on page 85.

VACUUM-GRIP SAFETY SHOE

THIS ATTRACTIVE dress-weight oxford is designed for safety on the job and styled for after work wear as well. The Thom McAn #4381 features the new Tri-Vac sole, which has only recently been released for civilian use by the U.S. Navy which developed it for heavy-duty use aboard carriers.

The Tri-Vac sole is skid-proof, vacuum-gripping, and said to be superior in use on all types of slippery, wet and oily surfaces. Made of Neoprene, this patented innovation can take it in wear against the action of acids, chemicals, oil, and gas. (For full details about this sole, see the article on page 17 of the July 1954 issue of "Safety Maintenance.")

As designed by Thom McAn, with leather-lined steel toe-box, the model is rugged, good-looking, and extra-safe. This plain-toe blucher is made of sturdy brown leather.

For details, use Key # FP-3 on Inquiry Card on page 85.

SQUEE GEE SOLES

THE NEWEST safety soles offered by the American Biltrite Rubber Company, are the Squee Gee Neoprene Soles. They combine the lightness and comfort of cellular Nuron-Crepe with the oil-proof qualities of DuPont Neoprene. The soles are unusually lightweight and flexible and provide the wearer with sure-footed comfort, due to the special Squee Gee design that provides extra traction on slippery surfaces. Squee Gee Neoprene Soles bear the Saf-T-Cel label and are available in popular colors and thicknesses.

For details, use Key # FP-4 on Inquiry Card on page 85.

LOGGER SHOE

THE PROTECTION of steel toe construction is now available in the new calked logger made by Bone-Dry Shoe Mfg. Co. Especially in the paper and pulp and hardwood industries where the work is with small logs that roll easily, the steel toe can prevent disabling injuries.

The maker claims the steel toe construction is 18 percent stronger, this extra strength being provided by a lip on the bottom of the toe cap which provides a wider foundation, preventing the steel toe from cutting through the shoe if struck or subjected to heavy weight. This shoe is made on an exclusive logger last, providing all day comfort. It is available in 8, 10, 12 and 16 in. heights.

For details, use Key # FP-5 on Inquiry Card on page 85.

CONSTRUCTION & MAINTENANCE WORKERS' NON-SLIP SHOE

THIS RUGGED, laced-to-toe work shoe is a natural for roofers, painters, aircraft workers, construction men, bridge workers and others engaged in high work. Featured in the shoe's design is the Tri-Vac flight deck sole, developed for non-slip safety on aircraft carriers. The oilproof, acidproof and waterproof Neoprene sole has a strongly gripping tread formed in a pattern of concentric circles that act like suction cups for secure footing even on wet or oily surfaces. (For details about the Tri-Vac sole, see the article on page 17 of the July 1954 issue of "Safety Maintenance.")

In addition to the special sole, this work shoe also has a flexible stainless-steel midsole plate that gives protection against foot injuries from puncturing by nails, spikes, etc. Made by the Charles Chester Shoe Co., this high model also features an arch-supporting air cushioned insole from toe to heel and nylon sole stitching.

For details, use Key # FP-6 on Inquiry Card on page 85.

IMPROVED FOOT GUARD

A NEW HEAVY-TREAD, anti-skid full sole and a new rubber strap fastening device are features of the "Sankey" Improved Foot Guard made by Ellwood Safety Appliance Co. The foot guard consists essentially of a metal shield to be worn over the shoe whenever the foot is in danger of being crushed or cut. It is designed to protect the entire front of the foot and instep against hazards from falling, rolling or flying objects, or from accidental tool blows.

The new rubber strap, which replaces the leather strap and coiled spring fasteners, applies tension through its entire length for more secure holding. The new rubber sole has a much deeper, heavier tread molded of first-run tire rubber. It offers better protection against slipping and provides longer wear.

For details, use Key # FP-7 on Inquiry Card on page 85.

INSULATED SAFETY SHOE

FOR OUTDOOR WORKERS in cold climates, refrigeration workers and others subjected to wetness and cold temperatures, the Record Industrial Co. is marketing a new insulated safety-toe shoe. The outside of the

shoe is weatherproof leather which is followed by a layer of Firestone Foamex as insulation. The shoe is lined with a soft, comfortable glove leather.

Built-in steel toes protect the foot from accidental injury, while Neocord soles and heels provide long wear and non-slip features. The "Thermo Shu" is designed for maximum safety and comfort in keeping the feet warm and dry.

For details, use Key # FP-8 on Inquiry Card on page 85.

TWO-WAY GROOVED SOLE

A NEW DESIGN in light-weight, long wearing Neoprene-Nitrocrepe is the "Safetred" made by the Bearfoot Sole Co., Inc. This new design has grooves running both the length and width of the sole to provide two-way slip-resistance. The material resists deterioration by oils and chemicals and provides maximum foot ease on safety and work shoes. Eye-appeal has also been taken into consideration to meet the requirements of today's style-conscious safety shoe wearers.

For details, use Key # FP-9 on Inquiry Card on page 85.

RUGGED SAFETY BOOT

A SAFETY BOOT has been specially developed to give more "pole-side" and sole protection to linemen, log-

(Continued on page 38)

What a big difference in *comfort* the HINGED BRIDGE makes!

Your workers will say they never had comfort like they get in the new Willson Contour-Spec—and its new hinged bridge adds an extra measure of protection, too!

It's the *hinge* that permits equal pressure at every point of contact with the face . . . snug comfort regardless of facial contour! And it's the hinged bridge that means extra safety because there are no dangerous gaps around the eyes.

Contour-Specs conform to *any* face—heavy, lean, round, long or bony! Result is, a new concept of comfort combined with protection that encourages workers to wear them willingly.

Let them try Contour-Specs—see how well the 47-mm. lenses suit every eye size—feel how easily the lightweight, snug-fitting Butyrate plastic frame "sits" without pressure anywhere. Order a supply from your Willson distributor now.

NEW *Contour-Spec*®

SAFETY SPECTACLES BY . . .

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More than 300 Safety Products Carry This Famous Trademark

WILLSON®

Leaders in Research and Development of Safety Equipment Since 1870

207 WASHINGTON ST., READING, PA.

(For details, use Key # D-17 on card on page 85)

SAFETY FIRST — BE — CAREFUL
NOTICE THESE DOORS MUST BE KEPT CLOSED
BE CAREFUL SAVE A LIFE IT MAY BE YOUR OWN
HELP KEEP THIS PLACE CLEAN
THINK ACCIDENTS ARE AVOIDABLE FORGET THE ALIBI
EXIT
DANGER — NO — SMOKING
WARNING CURRENT —ON—
CAUTION KEEP AISLES CLEAR

Whether it's

SAFETY SIGNS—

SARGENT-SOWELL CAN SUPPLY THEM ALL

Write for Illustrated Folder . . . in full Color.

More than 5,750 different Standard Signs in stock.

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Sargent-Sowell specializes in all types of standard signs — Industrial, Municipal, Construction, Plastic, etc.

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Sargent-Sowell maintains a complete inventory of more than 5,750 different standard signs for immediate delivery.

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(For details, use Key # D-18 on card on page 85)

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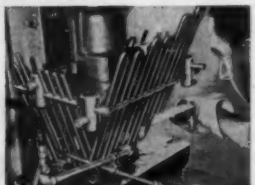
FOR

PUNCH PRESSES

Fit any Press

30 DAY FREE TRIAL



SWEEP GUARD

Guards to fit all types and sizes of punch presses. Single and double sweep arms available. Hardened wearing parts assure years of trouble free service. Send for Bulletin H.

ADJUSTABLE BASKET GUARD

Enclosure type guard, used for blanking and other first operation work, prevents operator from reaching in or coming in contact with moving die. Easily installed on any make punch press. Also available with clear plastic window. Write for free catalog.

Other Guards Designed and Made by Searjeant
Double Sweep Guard • Two-Hand Electro-Solenoid Control
End Zone Barrier Guard • Enclosure Guard for Milling Machines • Non-Repeat Mechanism

SEARJEANT METAL PRODUCTS, INC. No. 12 Pittsford Rd., Mendon, N.Y.

(For details, use Key # D-19 on card on page 85)

gers and miners. A double thickness of leather completely encircles the foot. A new, long counter is of one-piece, molded sole leather to give added protection to the arch. A specially designed steel shank and the steel box toe give the wearer the finest tempered steel foot protection. The "Hy-Climber" book also features logger-type heel, thicker sole, waterproof leather, and Dacron stitching throughout. Made by Hy-Test Safety Shoes, Division International Shoe Company.

For details, use Key # FP-10 on Inquiry Card on page 85.

SAFETY OXFORD

A NEW BROWN safety oxford that is both dressy and built for rugged wear is announced by the Iron Age Division of H. Childs & Co., Inc. Its light weight, combined with the long wearing qualities of Seiberling Rubber Company's Oil Pruf sole, recommend it for all industries where oxfords can be safely worn. Other features of the "620" include sweat resistant innersole, storm welt, dacron stitching and leather toe liner.

For details, use Key # FP-11 on Inquiry Card on page 85.

Test Program for Air Force Safety

A COMMUNITY of 43,000 people plus their dependents, 34,000 autos and 1,700 aircraft spell accident potential. And when this com-

munity is engaged in a flying industry—aerial combat training—the dangers increase.

For this reason the Crew Training Air Force at Randolph AFB, Texas established a new Directorate of Safety. It merges ground safety, which was under the deputy chief of staff for Personnel, and flying safety, to form a new staff section. The new directorate also becomes a part of the wing organization directly under the commander at each of CrewTAF's nine combat crew training bases.

Single Agency

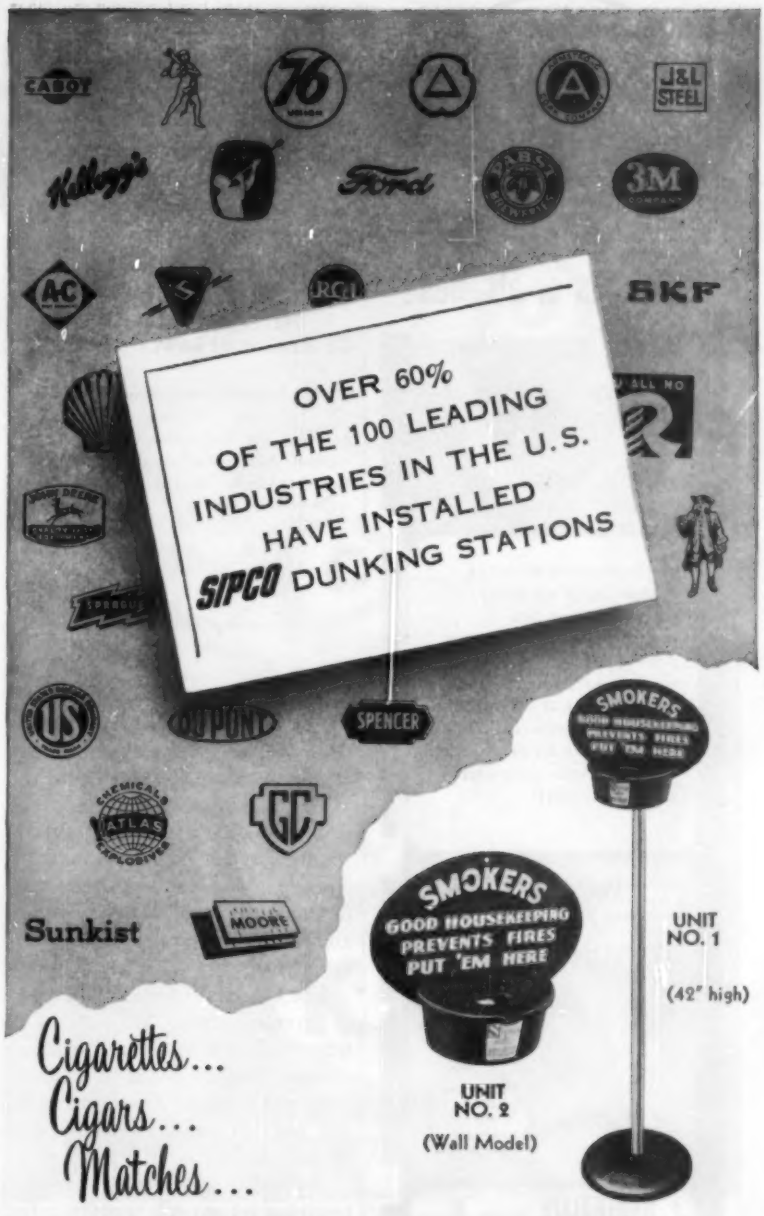
The consolidation into a single staff agency was first considered after witnessing notable reductions in aircraft accidents when flying safety was made a permanent part of the commander's special staff at CrewTAF Headquarters. Aim of the newly created staff section will be to curb both flying and ground accidents and bring about an equally noticeable reduction of ground accidents.

The new office will be given a one-year trial period. Studies will determine the program's effectiveness and the possibility of adopting it throughout the 42-base Air Training Command, of which CrewTAF is a part.

Industrial Hazards

The usual hazards of industry are present in the thousands of square feet of shop space on the nine bases. Machinery and tools for the upkeep of equipment—today's fastest jets down to lawnmowers—offer the potential of mangled hands, mashed feet, or worse. Most of the aircraft are used for student training and consequently fly many more hours than aircraft not in a training capacity.

Major Gen. Charles F. Born has named Col. Sam C. Gurney to head the new directorate at CrewTAF Headquarters. Under Col. Gurney will be two divisions, flying safety, headed by Major James W. Bradford, and ground safety, directed by Mr. H. E. Packard.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INDUSTRIES IN THE U.S.
HAVE INSTALLED
SIPCO DUNKING STATIONS
SMOKERS
GOOD HOUSEKEEPING
PREVENTS FIRES
PUT 'EM HERE
UNIT NO. 1
(42" high)
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(Wall Model)
Cigarettes...
Cigars...
Matches...
IMMEDIATELY EXTINGUISHED!
Sparky says
STOP FIRES BEFORE THEY START
It's not the cigarette or cigar that's being smoked that causes fires — it's after they're discarded and forgotten that they become a serious fire hazard! SIPCO DUNKING STATIONS end this fire hazard by immediately drowning every last dangerous spark.
Why not rid your plant of smoldering fire hazards by installing SIPCO DUNKING STATIONS. They are built for heavy industrial use and abuse — are attractive — economical — the perfect solution to your plant smoking problem.
WRITE DEPT. O FOR DESCRIPTIVE LITERATURE
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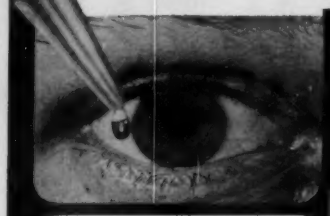
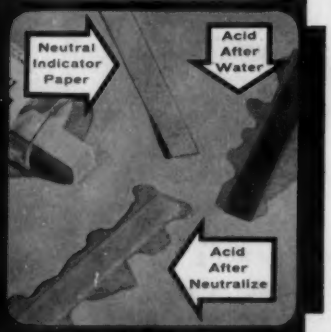
SIPCO
STANDARD INDUSTRIAL PRODUCTS CO.
116 SO. GARFIELD AVE. PEORIA, ILLINOIS
(For details, use Key # D-20 on card on page 85)

neutralize

Instantly neutralizes acids or alkalies!



When acid or alkalies splash eyes or skin, Neutralize works for immediate relief and prevents severe burns. No dangerous time loss determining if chemical is acid or alkali—Neutralize counteracts both. Try this test—you can do it yourself!



NEUTRALIZE OBSOLETES WATER DILUTION TREATMENT!

Write for instructions on the Do-it-yourself test for Neutralize, or call your Bullard distributor.

EVERYTHING BULLARD IN SAFETY

E. D. BULLARD COMPANY, 275 Eighth St., San Francisco

BULLARD

(Use Key # D-21 on Inquiry Card on page 85)

"What's the Law?"

Edited by
HENRY M. GROSMAN
Counsellor at Law, Newark, N. J.

Master Superior Court, New Jersey
Member
American Bar Ass'n, New Jersey Bar Ass'n,
National Federation Insurance Counsel
Past Commander, American Legion, Post 10,
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• • •

Disability Retirement Bars Compensation

CLAIMANT HAD BEEN employed by the City as a fireman but was forced to retire as a result of an injury arising out of his employment.

The claimant was denied compensation on the grounds that the statute specifies that no former City employee who has been retired on pension by reason of injury or disability shall be entitled to compensation for such injury or disability.

The Court in affirming the denial of compensation said: "Test is whether he was or was not receiving pension benefits at the time he was to receive compensation benefits and not whether he is forced to retire or does it voluntarily."

Under this case the claimant was receiving retirement benefits before the compensation matter proceeded to an award and therefore under the Workmen's Compensation Statute the retirement benefits barred any compensation benefits.

FLYNN vs. CITY OF UNION CITY, New Jersey Superior Court, Appellate Division. Decided October 15, 1954, 32 N. J. Super. 518.

New Insurance Carrier Not Liable For Aggravation of Previous Injury

THE CLAIMANT had suffered a prior compensable injury to his shoulder. At a later date he aggravated this condition, and was covered by the same insurance carrier as on the original risk.

In the present case, the claimant had, at a still later date, again aggravated his prior injury while shoveling coal in the course of his employment. Before this latest injury, however, the employer had changed insurance carriers.

In reversing the Workmen's Compensation Board's finding that the new carrier was liable for the amount of the award, the Court pointed out that there was nothing in the record that showed shoveling coal to be an unusual exertion or that an accident had been caused by the labor of shoveling coal.

The Court concluded that the injury was aggravation of a pre-existing physical condition incurred in the course of usual work and, therefore, the insurance carrier on the risk when the first accident and subsequent aggravation occurred should be responsible for the award.

MEYER vs. A. HOLLANDER & SONS, INC. New York Supreme Court, Appellate Division, Third Dept., Decided December 28th, 1954.

False Representation in Application for Employment

THE CLAIMANT sustained a serious back injury, which arose out of his present employment. Prior to this employment, the claimant had suffered a back injury which he had concealed from his present employer by answering "none" to the question on his application concerning previous injuries.

The insurance carrier argued that the fraudulent representation operated as a bar to recovery under the Workmen's Compensation Act.

In deciding the case, which was one of first impression, the Texas court held that when the assured

contracted with the insurance carrier to insure its employees, the carrier became liable for all sums of money which might become due to any employee under the terms and provisions of the Workmen's Compensation Act.

The Act does not provide that before a person becomes an employee he must truthfully answer all and any questions which may be asked him by his prospective employer. Nor does it provide that incorrect answers shall void the insurance coverage.

The right to workman's compensation is statutory and cannot be abridged by private agreements or special applications for employment. *PETROLEUM CASUALTY COMPANY vs. SMITH—Texas Court of Civil Appeals —November 17, 1954—274 S.W. 2D. 150.*

Screening Workers for Mechanical Factory Jobs

FOUR OUT OF every ten workers in the United States today are employed in mechanical or factory jobs—about 25 million personnel, of which one out of every four is a woman, reports Industrial Psychology, Inc., national psychological research organization. "This large concentration of mechanical personnel, plus their product contribution to the profit-loss structure of the company, make proper selection methods a first personnel step in this job family."

In the mechanical-factory job family, there are six job categories, as indicated by psychological standards: unskilled worker, semi-skilled worker, factory machine operator, vehicle operator, inspector, and skilled worker.

The Unskilled Worker job area embraces jobs on the lower mechanical level. Assignments are of a minor, simple, routine, repetitive and detail nature, requiring no decision-making of any type. Such job duties are found as moving materials, loading, unloading, shoveling, cleaning, and other gross manipulation operations. Three psychological aptitudes show up as important —eye-hand coordination (controlled brawn), perception of objects, and some tool-mechanical comprehension. Workers who qualify for higher level mechanical jobs (and are thus overqualified for unskilled worker) are poor risks, if kept in the unskilled job area too long.

The Semi-Skilled Worker was a creation of the industrial revolution. He is usually a worker without special training, but has an "industrial literacy" with various types of tools and mechanical processes. His job assignments are fairly detail, routine and repetitive, such as assembly work, production line operations, etc. Psychological aptitudes found important for the semi-skilled worker are eye-hand coordination, tool comprehension, object perception, and space relations—three of these aptitudes are the same as required for the unskilled worker, but

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. . . PREFER
Install K-LENS-M Lens Cleaning and Anti-Fogging Stations for clean, clear vision . . . for all types of safety eyewear, glass or plastic.
More Efficient—Lower Cost
Send company letterhead for FREE sample and complete information.
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REG. U.S. PAT. OFF.
The Acknowledged Leader in the Lens Cleaning Field
The WILKINS Co., Inc.
Cortland 2, N. Y.
(For details, use Key # D-22 on card on page 85)

the semi-skilled worker must meet higher standards.

The third mechanical job area, Factory Machine Operator, is related to the semi-skilled worker. The psychological difference between the two areas is that the semi-skilled worker does work of a gross manipulation nature, as contrasted to the factory machine operator who does work of a precise coordination nature (either by machine or by hand). The factory machine operator thus needs a good deal of eye-hand coordination and manipulation aptitude. His job is also related to the skilled worker area, in that close tolerances are followed, but differs from the skilled worker in that mechanical judgment is not involved. Typical factory machine operator job titles are cutter, press operator, grinder, lathe operator, finisher, watch or television assembler, welder.

The Vehicle Operator area embraces jobs involving the operation of a moving vehicle. His job duties are fairly detail and repetitive, but require a good deal of eye-hand coordination, perception aptitude, and particularly visualization of objects in their space relations.

Inspectors

The Inspector job is highly visual in nature, thus differing from other mechanical classifications. All the mechanical areas require object perception and space visualization aptitudes to some extent, but the inspector job is saturated in these, with coordination a minor trait. Inspector jobs range all the way from job duties which require mainly visual inspection of objects, to the inspector who accepts, rejects, or returns the product for re-work on the basis of standards involving his judgment or interpretation.

The Inspector job as described psychologically covers the visual type of inspection; workers at higher inspection levels may be in quality control, and classified as skilled workers or in the technical job family.

The sixth mechanical job area, and the highest mechanical classification (psychologically and otherwise), is the Skilled Worker. These are the men who make the machines, the patterns, models, working samples, tools, dies, templates, jigs; and who keep things running. The skilled worker's job duties are mechanically complex and difficult; and not routine or repetitive. They involve the planning and performance of tasks that require skillful use of tools and equipment, and an understanding of how machines and tools operate. Psychologically, the skilled worker needs good mechanical-tool comprehension, the other mechanical aptitudes described above but at a higher level, and paperwork aptitudes.

For scientific selection of mechanical personnel, the following psychological screens, all administered and interpreted in the company, are available:

(1) Weighted application blank

PROTECTION
FOR HANDS
CHARCO
NEO SOL®
ALL NEOPRENE GLOVES
These two new all-neoprene top quality gloves offer a real bonus in job efficiency and economy, through extra long life and superior protection. One is solid black for general use; the other truly white for food processing and sanitary purposes. Both have red inner lining and red roll at the cuff; and both have plus qualities in hand comfort, flexibility and touch sensitivity.

"NEO-SOL" BLACK AND "NEO-SOL" TRULY WHITE
CHOOSE CAREFULLY WHEN BUYING
FOR SAFETY
BUY ONLY THE VERY FINEST
BUY "CHARCO"
ON THE USE AND PERFORMANCE OF CHARCO PRODUCTS DEPENDS OUR REPUTATION—AND THE SAFETY OF THOSE WHO USE THEM.
NO WONDER
WE MAKE ONLY THE FINEST
Prove This in Your Plant!
Place a Trial Order Today
FREE
Write today for our new 28 page catalog with chemical reference charts and glove selector guide.

Gloves are available in a complete range of sizes, lengths and thicknesses
CHARLESTON RUBBER COMPANY
31 STARK INDUSTRIAL PARK CHARLESTON, SOUTH CAROLINA
(For details, use Key # D-23 on card on page 85)

—short, followed by the screening interview (10 minutes);

(2) Appropriate aptitude job-tests, available for each of the six mechanical job areas, or a composite package for the mechanical family (15 to 35 minutes);

(3) Personality tests, either a test of general stability, or of extrovert-introvert personality, or both (5 minutes per test);

(4) Weighted application blank —long, followed by placement interview in which all the data above are brought together and hiring decision is made (15 minutes for application, and 20 minutes for interview).

Further information on the scientific screening and selection of mechanical-factory personnel, in terms of the psychological tests to use and how to install them, may be obtained from Industrial Psychology, Inc., Research Center, Tucson 6, Arizona.

ASME Committee for Nuclear Engineering

THE AMERICAN Society of Mechanical Engineers has established a Nuclear Engineering Committee to co-ordinate the society's activities in "those areas of mechanical engineering in which a knowledge of nuclear physics is essential." Among these areas are core design, shielding, waste handling, fuels and fuel fabrication, radiation effect (with special emphasis on metals and safety), special equipment, and operation of nuclear power plants.

Chairman of the new committee is Albert C. Pasini, assistant general superintendent of production, The Detroit Edison Company. The new committee will serve to co-ordinate a number of activities connected with nuclear engineering which are now carried out by various divisions of the society, primarily those devoted to fuels, heat transfer, instruments and regulators, metals engineering, power, and safety.

Mr. Pasini pointed out that increasing declassification of documents, made possible under the new Atomic Energy Act, will make the work of the committee more practical than it would have been in the past. Primary assignments of the committee will be to plan for participation of ASME in a Nuclear Engineering Conference to be held under the auspices of Engineers Joint Council in the summer of 1955, and to study the society's long-range needs in the field of nuclear engineering and recommend a method of organization within the society.

It was emphasized that the Nuclear Engineering Committee is separate and distinct from ASME's Nuclear Energy Application Committee. The latter is a policy group. The former, under the normal procedures of ASME, could lead to the formation of an organization of professional division status.

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THE Future SHOWS

New York, N. Y. *April 11–15*

Twenty-fifth Annual Greater New York Safety & Exposition (Hotel Statler). Harold C. Mesch, general chairman, Greater New York Safety Council, Inc., 60 E. 42nd St., New York 17, N. Y.

Niagara Falls, N. Y. *April 19–21*

Fifteenth Annual Western New York Safety Conference, in cooperation with the American Society of Safety Engineers (Niagara Hotel). Patsy E. Gismondi, Executive Secretary, 1436 Delaware Ave., Buffalo 9, N. Y.

Cleveland, Ohio *April 26–28*

Twenty-fifth Annual All Ohio Safety Congress & Exhibit (Hotels Cleveland and Hollenden). A. W. Moon, Congress Manager, Industrial Commission of Ohio, Safety & Hygiene Div., Columbus 15, Ohio.

Grand Rapids, Mich. *April 26–28*

Twenty-fifth Annual Michigan Safety Conference (Pantlind Hotel and Civic Auditorium). R. H. Goring, Executive Secretary, Michigan Bell Telephone Co., Detroit, Mich.

Chicago, Ill. *May 1–3*

Greater Chicago Safety Conference & Exposition (Sherman Hotel). Greater Chicago Safety Council, 10 N. Clark St., Chicago 2, Ill.

Easton, Allentown, Bethlehem, Pa. *May 2–4*

Twenty-eighth Annual Eastern Pennsylvania Safety Conference (May 2, Hotel Easton; May 3, Hotel Americus and Hotel Traylor; May 4, Lehigh University). H. A. Seward, secretary, Lehigh Valley Safety Council, 602 E. 3rd St., Bethlehem, Pa.

Winston-Salem, N. C. *May 18–20*

Twenty-fifth Annual North Carolina Statewide Industrial Safety Conference (Robert E. Lee Hotel). H. S. Baucom, Safety Director, North Carolina Industrial Commission, Raleigh, N. C.

Duluth, Minn. *May 19–20*

Thirty-first Annual Conference, Lake Superior Mines Safety Council (Hotel Duluth). John Anderson, secretary, 18 Federal Building, Duluth 2, Minn.

Syracuse, N. Y. *May 16–18*

Central New York Safety Conference & Exposition (Hotel Syracuse & Hotel Onondaga). Walter L. Fox, Manager, Safety Division, Syracuse Chamber of Commerce, 351 S. Warren St., Syracuse 2, N. Y.

Chicago, Ill. *May 16–20*

Eighth National Materials Handling Exposition & Conference (International Amphitheatre). Clapp & Poliak, Inc., exposition management, 341 Madison Ave., New York 17, N. Y.

Richmond, Va. *June 2–4*

Twenty-first Annual Meeting Virginia Safety Association (Jefferson Hotel). William M. Myers, executive secretary, Virginia Safety Association, Room 302, 1103 E. Main St., Richmond 19, Va.

Hartford, Conn. *June 7–8*

Tenth Annual Connecticut Safety Society Conference (Statler Hotel). William G Willse, Manager, National of Hartford Group, 1000 Asylum Ave., Hartford 15, Conn.

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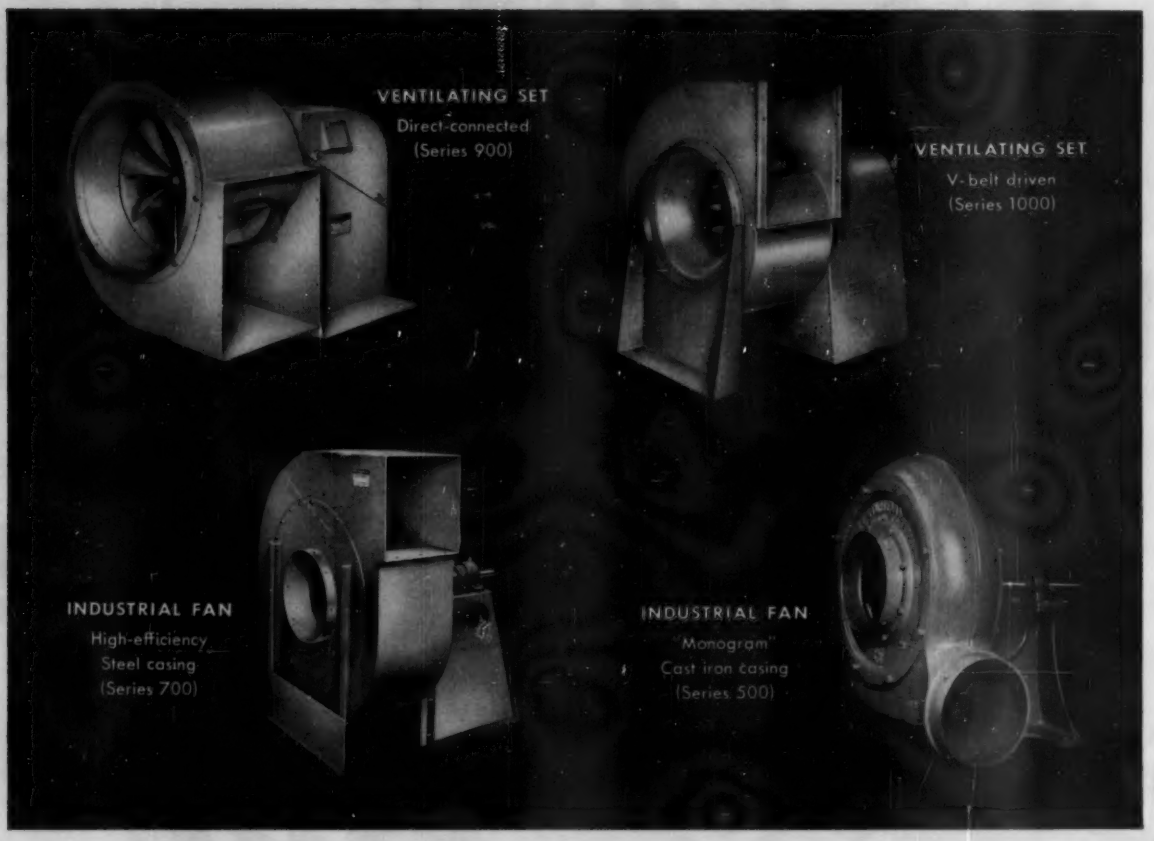

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Industrial Hygiene

Industrial Hygiene Laboratory

AN INDUSTRIAL HYGIENE laboratory and expanded office facilities for the New York State Labor Department's in-plant health protection activities in western New York have been established at 252 Niagara Street, Buffalo, it has been announced by First Deputy Industrial Commissioner Charles W. Halloran.

Establishment of the new laboratory will not only provide quicker and improved industrial hygiene service for the chemical, foundry, metal finishing and other industries concentrated in that area, but also will reduce staff travel from New York. It has a fully equipped chemical laboratory for the analysis of possibly hazardous materials and air-borne contaminants; for dust sampling and counting, biochemical studies, industrial noise determinations and analyses, and complete evaluations of industrial exhaust systems. In addition, the headquarters offices will provide a convenient base of operations for the Department's physicists and other experts handling problems of health and safety which stem from increased use by industry of isotopes and other forms of radioactive energy.

Industrial Health Conference

METHODS OF SAFEGUARDING workers' health will be the primary subject for discussion at the forthcoming meeting of the American Industrial Hygiene Association in Buffalo April 25-28. More than 60 papers will be presented, together with panel discussions, committee meetings and joint meetings with other organizations active in the field of industrial health.

This meeting of the American Industrial Hygiene Association will be concurrent with meetings of the American Conference of Governmental Industrial Hygienists, American Association of Industrial Nurses, Industrial Medical Association, and the American Association of Industrial Dentists. Based on past experience, attendance of the 1955 Industrial Health Conference will number in the thousands.

Experts in the various fields will discuss health aspects of new materials of commercial importance, laboratory experiments, air pollution, and radiation. Workers from industry, governmental agencies, and universities will participate in the exchange of new information and ideas.

Exhibits and demonstrations will be arranged by companies producing equipment useful in the field of industrial hygiene and toxicology.

Lead Absorption Control

LOSS OF INDUSTRIAL working time due to lead exposure can be virtually eliminated, Dr. Gilbert B. Meyers, medical supervisor of the Philadelphia plants of The Electric Storage Battery Company, told the American Academy of Occupational Medicine.

The battery manufacturer's lead absorption control program has been in operation for two years. Dr. Meyers said the preventive program has been so effective that "we have had to restrict only five out of 1,379 workers from lead exposure jobs. All except one were able to continue working. All quickly recovered clinically."

Regular urine tests for lead absorption which facilitate early diagnosis, "are the backbone" of the medical part of the program, according to Dr. Meyers. All workers exposed to lead are tested every four to eight weeks. If hazardous absorption is found, the worker gets a urine test every two to four weeks. If lead absorption approaches the dangerous level, the worker is given blood tests and complete physical examinations at one-to-four-

(Continued on page 59)

By A. P. G. PETERSON
and C. E. WORTHEN
General Radio Company
Cambridge, Massachusetts

Open the N

SIMPLE NOISE MEASURE

for a quick look...

As THE SERIOUSNESS of the noise problem presses more forcefully on industrial management, those charged with carrying out industrial hygiene programs often face a bewildering situation. The complications of the situation are twofold: first, there are no absolute criteria for deafness risk; and second, although a means of locating and evaluating noise hazards is necessary, the selection and operation of instruments is not always easy for people unfamiliar with acoustical problems. Fortunately, it is possible to solve some problems with relatively simple equipment. Furthermore, the use of simple measuring equipment can lead to a better understanding of acoustical problems, and familiarity with the simple equipment makes the more complicated measuring equipment easier to use—in brief, a chain reaction of knowledge.

There are other industrial noise hazards besides hearing damage that should not be overlooked. Verbal communication between individuals is usually necessary in any plant. Plant safety is seriously cut down when noise levels are high enough for instructions to be misunderstood or for shouted warnings to go unheard. In such situations, noise-level measurements with simple equipment can be very useful as correction guides.

Figure 1. In picture above man measures noise from rotating electrical machinery with sound survey meter for overall level.

The Nature and Effects of Noise

The absence of absolute criteria for hearing damage stems directly from the complex nature of noise and of its physiological and psychological effects on man. Absolute criteria have been the subject of investigation and study for many years, and studies are still continuing. Tentative conclusions have been reached and published. The use of those results that are at present available is justified only in the light of their recognized limitations and under specified conditions. This subject is clearly beyond the scope of an article on measurement, and the reader is referred to existing publications [1, 2] for further details.

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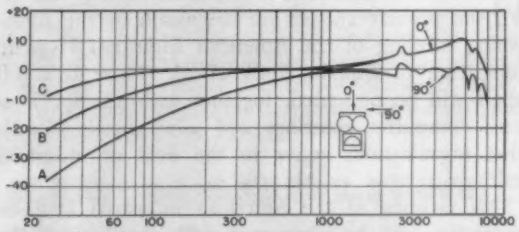

Figure 2. Frequency response curves of survey meter show 90° normal curve and important 0° curve for high-frequency distinction.

ing Attack on oise Problem: MENT SURVEY

for double check...

Figure 3. The minimum equipment for a complete noise survey, consisting of a sound-level meter and an octave-band analyzer, are shown in the picture above being used to measure the noise level in the vicinity of a braiding machine. Note mike at left.

which also adds this . . .

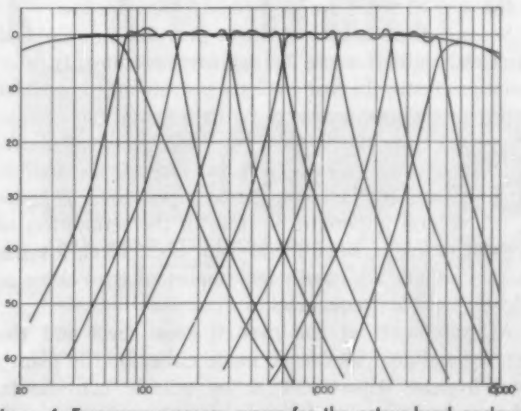

Figure 4. Frequency response curves for the octave-band analyzer. Each curve shows the pass band for a single switch position only. When the switch is set in any one position, the analyzer responds only to noise of those frequencies embraced by the corresponding curve in the graph. This helps discover more dangerous noises.

These same considerations, the nature of noise and its effects, also have a direct bearing on measurement methods and measuring equipment, and a brief discussion of them helps understand the purpose and capabilities of measuring equipment. First, noises are generally complex. The energy in a noise is not usually concentrated at a single frequency, or pitch, as it is in a pure tone; but rather the energy is distributed over much of the audible range. This distribution varies for different sources. For example, the powerful hiss of a steam hose used for cleaning has considerable energy over the whole audible range, and it has more energy at the high-frequency end of the audible range than at the low-frequency end. In contrast, the noise produced by an automobile is mostly at the low frequencies, but it too has some energy over the whole range. There are many devices that have such characteristics, and there are many others, such as chipping hammers, pneumatic wrenches, and calculating machines that have the greater part of their noise energy near the middle of the audible range.

The second part of the problem concerns the fact that the psychological and physiological effect of a given amount of noise energy depends on how it is distributed in frequency. Thus, if a certain amount of noise energy is concentrated at low frequencies, it is probably less damaging to the hearing mechanism than if the same amount of energy is concentrated in the middle frequency range. Similarly, low audible frequencies are usually less annoying than high audible frequencies of the same level.

Related to this aspect of the noise problem is doing something about the noise. That is, when we know where the important noise energy is in level and frequency, we can control the noise more effectively and economically.

There are still other characteristics of a noise that are significant in determining the psychological and physio-

logical effects. Among these are the duration of the noise, how often it occurs, and the waveform. The waveform is particularly important for impact noise, because it is then desirable to know such things as the peak value of the noise level and how long the noise remains near the peak value in level. But that measurement requires further instrumentation than we shall discuss here.

Can a warning be heard? Figure 5

Noise level is related in this table to distance in feet over which a shouted warning can be heard, a directly important test of immediate danger to area's employees.

Distance in Feet from Noise Sound	A-level
0.5	96
1	90
2	84
3	80
6	74
12	68
24	62

Measuring Equipment

Let us first consider the fairly complete noise-measuring setup.[3] This setup would usually include at least a sound-level meter and an octave-band analyzer, as shown in figure 3. Frequently, other auxiliary equipment, such as magnetic tape recorders, narrow-band analyzers, and cathode-ray oscillographs would also be used; and microphones with particular characteristics for the job at hand might be substituted for the microphone regularly supplied with the meter.

What do these instruments do for us? First, the sound-level meter amplifies the electrical signal from its microphone, which is driven by the sound waves. This amplified signal actuates the indicating meter to show the over-all noise level. This level is important because it is the first significant indication of the seriousness of the noise problem. That is, noises of similar character are more likely to cause hearing damage, to be annoying, or to interfere with verbal instructions, if the over-all levels are high than if they are low.

Second, the sound-level meter provides an amplified electrical signal for use by auxiliary instruments. For noise problems, the first auxiliary instrument to consider is the octave-band analyzer. By its use, one can analyze the signal from the sound-level meter in terms of frequency (or pitch) into eight bands covering the audible range of sounds. This division, as represented in figure 4, is a second important measure of the seriousness of a noise problem, since for a given noise level, low-frequency sounds are usually less important than those of higher audible frequencies.

Measurements of the over-all noise level and the octave-band analysis can be made either by the plant's own hygiene department or by outside consultants. Then, after a study of the levels in comparison with the tentative criteria available,[2, 3] it is possible to decide whether or not a noise hazard exists, and, if necessary, to recommend and to carry out noise reduction measures, or to recommend protective devices.

Should You Buy Measuring Instruments

Most large organizations will find it desirable to own the measuring equipment necessary for carrying out such an attack on a noise problem. Even comparatively small organizations may find that owning a sound-level meter and analyzer is the most economical procedure, because they will have enough noise problems to justify it. For example, in addition to the noise hazard, there is the interference of noise with speech. In some locations in a modern plant, the noise level may be so high that the foreman has difficulty giving verbal instruction to his workmen. This condition reduces efficiency. Sometimes with the aid of sound-measuring equipment, one can tell in quantitative terms how serious the problem is and also what, if anything, can be done about it.

Another practice that is gaining acceptance is the specification of maximum permissible noise levels for new equipment. When a plant considers ordering a hydraulic pump, for example, they would ask, on the request for a quotation, for a specification of the noise-power level in octave bands. The quoted levels would then be one of the specifications that would be used in judging whether one particular model or another should be purchased.

In other words, a more expensive but quieter machine may be a better buy than a noisy one, since the noisy machine may require expensive noise-reduction procedures because of the noise hazard or because of reduced efficiency from noise interference with verbal instructions. A similar situation has been appreciated, for many years, by electric power companies who have had the problem of putting transformer substations in

Simple Maintenance Check . . .

Figure 6. Driven by transistor-type oscillator at left, acoustic-calibrator checks sound-level meter's accuracy with a pure tone.

residential neighborhoods. Noisy transformers mean trouble from complaining neighbors, so quiet transformers are worth a premium. Management is now beginning to realize that noisy equipment may also be expensive in the long run. As this fact becomes more generally appreciated, it will be helpful to have the necessary sound-measuring equipment to tell if machinery meets noise level requirements.

Simple Noise Meter

Since many smaller plants will prefer to begin on acoustic instrumentation with a very simple setup, we shall now discuss the possibilities of the very simple sound-survey meter, shown in Figure 1. Although it is not a substitute for the equipment shown in Figure 3, the small sound-survey meter is designed specifically for use in preliminary surveys, and it is still useful even if detailed measurements prove to be necessary. It is inexpensive, small, easily carried, and easy to use. Because it can be held in one hand, measurements are speedy. With it you can check over-all levels in a whole plant about as fast as you can walk through it.

The sound-survey meter does the job of measuring the over-all level, but it does not provide an output for frequency analysis. It has a microphone, an amplifier, and an indicating meter, so that it can give the first significant measure of a noise, namely, the over-all level. It can then be used for a preliminary survey to see if over-all levels are so high that a complete survey with more refined instruments is necessary. After remedial measures have been taken, periodic repeat measurements with the sound-survey meter will check on changing conditions. Not only are such checks desirable as a precautionary measure, but also to indicate to plant personnel that management hasn't forgotten the problem and is constantly alert to it.

Noise Range Indication

The sound-survey meter can do more than measure the over-all level. It can give some indication as to whether the noise is mainly in the high-frequency range, in the low-frequency range, or widely distributed. Both the sound-level meter and the sound-survey meter are equipped with a control knob that permits different frequency-weighting networks to be selected. These networks alter the response of the meter in the low-frequency range as shown by the frequency response curves of Figure 2. Note that with the control knob in position C, the response is nearly uniform, in position B, the response below 1000 cps is reduced somewhat, and in position A, the response below 1000 cps is reduced greatly. Then, if 3 readings on the same noise are taken with the control knob in the 3 different weighting positions, one can estimate how the noise energy is distributed.

For example, if the 3 readings are all essentially the same, the noise energy is mainly above 1000 cps. If a

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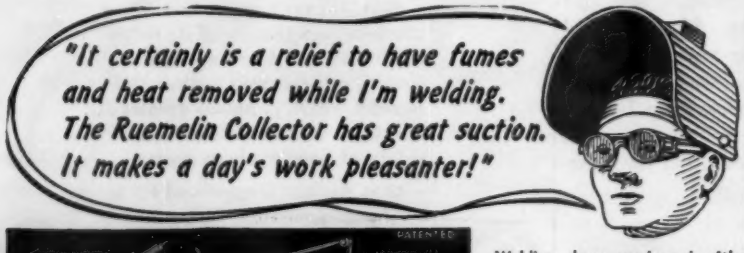
moderate reduction in level reading is obtained in going from the C to the B weighting; and, if a large reduction is obtained in going to the A weighting, the noise is mainly low-frequency noise. For an intermediate condition, the noise is probably distributed around the 1000 cps point, but it may be over the full frequency range of the meter. We have here a means for a qualitative indication of the distribution of noise energy that can guide one in making a decision as to whether a noise is a serious problem or needs further investigation before a final decision is made. It can also assist in doing something about the noise. But, of course, the information provided by a more complete measurement setup is usually more satisfactory for making final decisions.

Examples of Use

A simple illustration of an actual occurrence in a factory will show how the sound-survey meter can bring out important facts about a noise situation. A progressive management had realized for some time that some of its operations were so noisy that the operators might be subject to damaging noise levels. For example, to be on the safe side, they had been requiring that operators of such machines as grinders and chippers should wear ear protectors. But they had not felt that such protection was necessary for nearby workers doing operations that were in themselves quieter. A quick check with the sound-survey meter showed, however, that many of those workers were experiencing just as high noise levels as the workers required to use ear protective devices. Naturally, the logical conclusion was to extend the use of protective devices to all workers in the vicinity of noisy operations.

How Far Does Noise Spread

This illustration brings out another important point that needs checking in industrial noise situations: namely, how far does the noise spread from a noisy machine? At first one might assume that all one needs to do is to walk around with a sound-survey meter and to observe the over-all levels at various distances from the noisy machine. To some extent, this assumption is correct. However, one important effect makes the problem a bit more complicated. This effect results from the fact that high-frequency sounds usually decrease in level with increasing distance faster than do low-frequency sounds. Particularly in acoustically treated rooms, one will find that the low-frequency energy in a noise will extend over a wider area than will the high-frequency energy. If an octave-band analysis of the noise at different distances is available, the effect can be easily observed quantitatively. With the sound-survey meter, one can observe this by noting the readings of the noise level for the 3 different weighting positions. One should find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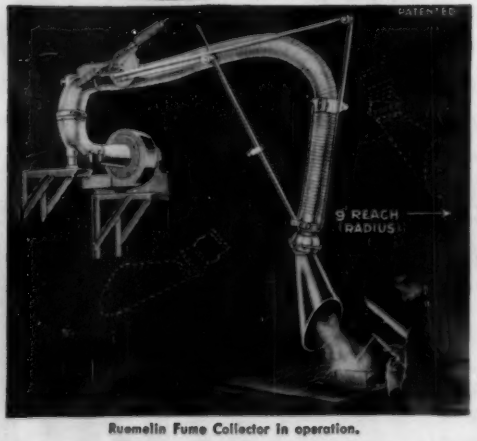

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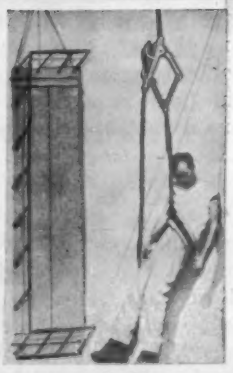

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P-K BURN OINTMENT, SIX 1/8 OZ. TUBES PER UNIT
P-K BURN OINTMENT, TWO 3/5 OZ. TUBES PER UNIT

FIRE, ELECTRICAL, WELDING, STEAM AND FRICTION BURNS.

Scalds — Sunburn — Windburn

P-K BURN OINTMENT provides immediate and sustained relief. It is a soft Lanoline base cream with an effective analgesic.

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that at a distance from the source of noise the differences among the 3 readings should be greater than at a point close to the source. If an octave-band analysis is not available, it has sometimes been recommended that the B-reading be generally used to rate the sound in such instances. This type of compromise is useful for making a preliminary decision, but it is usually wise to record the readings with all 3 weighting positions. Such readings will probably be useful as time goes on in judging the changing pattern of the noise in a plant.

The sound-survey meter can also be used to determine the degree to which noise interferes with speech. In order for a shouted warning to be understood, the noise as measured with the A-weighting network should be less than the value shown in the table of Figure 5. These values will vary somewhat depending on conditions, but the table should be useful as a guide for estimating how much an unsatisfactory noise situation must be changed in order to make it satisfactory from the speech-interference viewpoint.

Records

In any noise-measurement program set up, it is very important to develop a systematic procedure for recording the measured data and for maintaining equipment in proper operating condition. The procedures for recording and keeping data on noise measurements can usually be worked out to suit the conditions at a given plant and a number of suggestions for the type of data that should be recorded are available.

Maintaining equipment usually means, at a minimum, regular checking of batteries and replacement when necessary. In general, it is desirable to go beyond this step and take advantage of a simple calibration check system that is available. The method is based on the use of a sound-level calibrator and an electrical oscillator as shown in Figure 6. This combination supplies a pure-tone sound of known level to the microphone. If the sound-level meter or sound-survey meter correctly indicates this sound level, there is good assurance that the instrument is in proper working order.

Pictures by courtesy of General Radio Co.

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[3] *"Handbook of Noise Measurement," published by the General Radio Company, 275 Massachusetts Avenue, Cambridge 39, Massachusetts, Price $1.00.*

Chicago Air Pollution

A TWO-YEAR research program into the sources of Chicago's air pollution problem has been announced by The Midwestern Air Pollution Prevention Association.

Details of the plan were outlined by the association's president, Dr. Haldon A. Leedy, vice president and director of Armour Research Foundation of Illinois Institute of Technology, Chicago.

Once the sources of air contamination are determined, Leedy said, MAPPA intends to conduct a widespread educational program designed to enlist the public's support in controlling air pollution. He pointed out that anti-pollution legislation and smoke abatement devices have been helpful in reducing air pollution, but that no permanent solution is possible without knowledge of the underlying causes of atmospheric pollution.

Leedy said Armour Research Foundation recently completed a $20,000 study for MAPPA which was "a step in the right direction." The investigation included a limited analytical study of Chicago's settled dust, and a partial statistical survey of the city's smoke violation reports. The project provided for study of some of the pollutants in Chicago's atmosphere, but little more than a superficial look at the sources of air pollution, according to Leedy. He estimated that about a half billion pounds of dust fell on Chicago each year. That's about 100 pounds for each inhabitant, or enough to form a 1/64th-inch layer of dust over the entire city.

Contrary to popular belief, Leedy said, the largest contributor to air pollution is the average citizen—not industry. Scientists believe that approximately 45 percent of Chicago's settled dust is wind-generated; another 45 percent is combustion dust, and the remaining 10 percent dust from a variety of industrial operations.

"One of the principal keys to smoke control is complete combustion. A dense black smoke, for example, will contain well over 50 percent unburned fuel. In such cases, more than one-fourth of your fuel is going up the chimney unburned," Leedy explained.

Medicine Alone May Not Conquer Syphilis

MEDICINE HAS ALMOST won the battle against syphilis but medicine alone cannot completely finish the job. What is needed is discovery and treatment of unknown cases and prevention of new infections, physicians report.

A review of more than 250 publications on the disease last year indicates that although "great strides have been made in venereal disease control, complete control is far from being accomplished." The review appeared in the February *Archives of Internal Medicine*, published by the American Medical Association. It was written by Drs. Herman Beerman, Ira L. Schamberg, Leslie Nicholas, Philadelphia; and Lawrence Katzenstein, Wilmington, Delaware; with the help of Drs. T. Guthe and C. J. Hackett, Geneva, Switzerland.

Is Disease Decline "Real"?

They said penicillin, sometimes in only one-shot form, has made treatment of some forms of syphilis easier and more effective. But the review said the sharp decline of reported syphilis since the development of penicillin may not be "real" or lasting.

It has been estimated that some 2,000,000 untreated cases of syphilis are going unnoticed. Reported syphilis may show a decline simply because many cases are not known by health officials. What is worse is that early latent syphilis seems to be slipping undetected into the second, more serious stage.

It's no longer really a medical problem, some physicians feel. Public education and cooperation helped make possible the successful use of new scientific discoveries. Now the "potential and actual" comeback of syphilis suggests "a critical need" for re-education in control and prevention.

Control depends on early diagnosis and treatment. The death rate "for the next few decades will depend largely on the discovery and treatment" of thousands still at large in symptom-free stages. Tracing immediate contacts is not enough. Close relatives of congenital cases must be examined as well as spouses and children of all persons with positive blood tests. Prevention is largely a matter of controlling promiscuity.

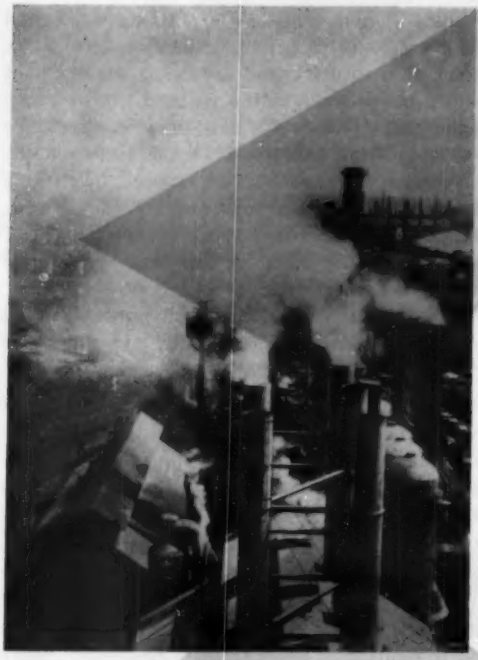
Future Outlook

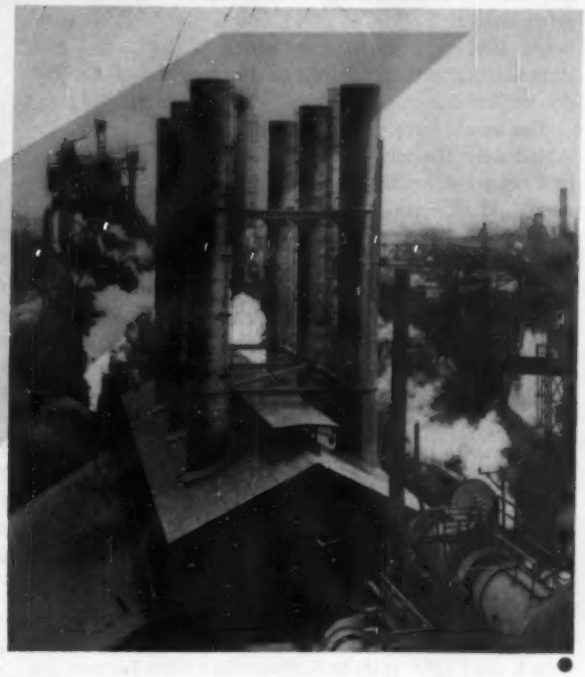
The long-term outlook "does not justify any relaxation of vigilance or abandonment of special efforts against syphilis," the review stated. It suggested that "every public-health-minded citizen" should think about the problem of venereal disease control funds, which may be cut because the problem seems to be in hand. The American Venereal Disease Association, the Association of State and Territorial Health Officers, and the American Social Hygiene Association have urged maintaining a $10,000,000 Federal budget for venereal disease control. They said present allocations are inadequate.

Syphilis is one of the most complicated diseases known to man, the review noted. It can affect children born to infected parents, and can result in blindness, heart disease, and insanity, among other things. While the decline in the reported incidence has been "one of the most dramatic episodes" in modern epidemic control work, the problems of the future are prevention of infection, control of spread, and discovery of untreated cases to prevent the "catastrophic effects" of late stages.

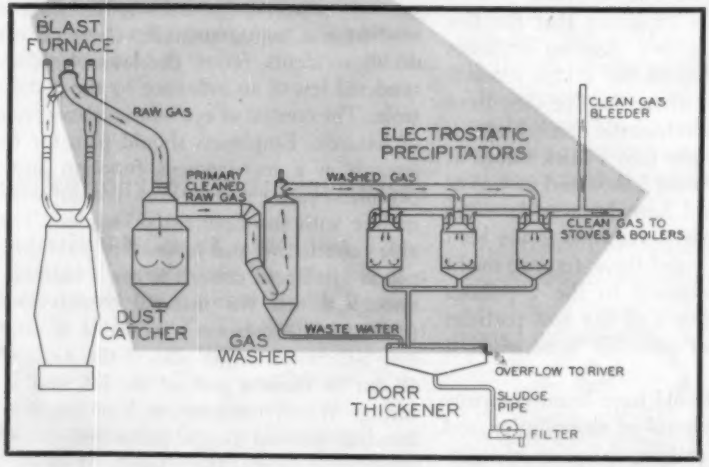
. . . NOW YOU DON'T . . .

NOW YOU SEE IT!





THANKS TO . . . .
NEW POLLUTION CONTROL



Artist's drawing (at left) shows how stream and air pollution are controlled by blast furnace installation. Gas is cleaned by precipitators, washed by huge scrubber, and returned to furnace. Dirt is collected as sludge and reused, while the cleaned water returns to river.

IF YOU HAD BEEN a member of a certain group of Cleveland city officials, councilmen, and citizens on a certain day late last fall, you would have seen something which would have amazed you almost as much as an atomic cloud, and made you a great deal happier.

First of all, of course, you would have had to have

been out at the central furnaces and docks of the American Steel & Wire Division of the United States Steel Corporation . . . in the Cleveland "Flats." You would also have to have been one of Cleveland's diligent fighters against air pollution. And, you would have remembered 1947 . . . the year in which "Flats" industries dumped better than 50 tons of dust per month on the downtown streets.

You would have been aware that industries had cooperated with the city so well since then that the figure had been cut by 22.7 tons a month. You would have been told that you were about to witness another big step forward . . . the control of stack gases coming from the huge boiler house of "central furnaces and docks."

As you thought back you would have remembered seeing smoke flowing in thick, unending streams from the blast furnace stacks a short time ago. It probably would have seemed that it would never stop. Today, however, as you looked up, electrostatic precipitators and a 9-story primary gas washer had gone into action . . . and suddenly the smoke was no longer there and in its place was clean, heat-shimmering air.

Then you would have been led around by company officials to see the stack gas scrubber and washer which sprays about 7 million gallons of water in a 24-hour period on gas coming from the blast furnace process. You would also have observed electrostatic precipitators which use 75,000 volts to further clean blast furnace gas at the rate of 130,000 cubic feet per minute.

You would have discovered that the new equipment removed more than 99 percent of the flue dust from the blast furnace gas before it is used as a fuel in the furnace stoves and nearby boiler house, where it burns with an emission of smoke and dust particles 40 times less than the Cleveland city ordinance requires.

It would have been further explained that the flue dust particles removed in the two cleaning processes are pumped in liquid solution to the sludge removal unit, called a Dorr thickener, where the flue dust from the primary gas washer and electrostatic precipitators is gathered by a large rotating rake into a thick sludge at the bottom. The thickener cleans 5 thousand gallons of water per minute, you would have been told. After further processing, this material is returned to the blast furnace as a raw material . . . and the water, you might have asked about . . . is returned to the Cuyahoga River with more than 95 percent of the dust particles removed . . . indeed, cleaner probably than when it was pumped out.

At a luncheon later you would have heard company officials comment that the control of air pollution and more efficient equipment operation, reduction of maintenance costs, and reuse of raw materials complement each other. You would have heard it announced that the same type of equipment was being added to other blast furnaces.

Chances are, you would have gone away happy.

Pictures by courtesy of United States Steel Corp.

An Effective Eye Program

(Continued from page 23)

effectiveness of the worker, there should be a continuing educational, training and inspirational effort by the employer, using all means available and creating some if there be need. Aim to produce a conscious knowledge that the safe way is the best way to do things.

13. If a selective goggle program is to be enacted, plans should be made for the progressive development of this into a full-fledged 100 percent goggle program.

If planning is good, execution should be equally good provided management is determined and sincere. Since a program is a management decision, management should open the program with a statement of its policy on the program. The details of a program should be set down in writing for all workers to see and to understand. Management should set an example by sticking to program requirements in their entirety.

A program also needs to be followed up. Accident records will provide a basis for comparison which, in turn, will reveal progress being made. Where a selective goggle program is in force, records may also reveal additional areas where the goggle program should be applied.

Periodic safety inspections of a plant by an employer will reveal the degree of compliance with an eye safety program. Infractions of goggle-wearing rules should be dealt with by management in a way that is consistent, just, and commensurate with the circumstances of the violation.

Bear in mind these salient points: there is an eye safety problem in industry and there is evidence that it is most critical in small plants. A plant's efficiency is inversely proportionate to its accident frequency. Since efficiency is a management responsibility—accident prevention is a management function. Eye accidents, as do all accidents, follow the laws of chance, which are rendered less of an influence by the installation of controls. The control of eye injuries stems from the control of hazards. Employers should plan for the control of hazards as a management function and establish an organized plan to effect such control and to follow-up in line with management principles. There are available informative and instructive publications. An employer intelligent enough to run a business is intelligent enough to use the material constructively. Personal professional assistance is available if needed. Mandatory adherence to the plan is the most effective basis. It can be made a part of the job and a condition of hiring. Worker cooperation is of course essential. One hundred percent goggle protection provides optimum safeguarding and is the ultimate of all eye accident prevention programs. The occupational vision conservation program is the broadest and all-inclusive sight protection program. It includes the eye accident prevention program and should be the goal of all small plants.

Pictures by courtesy of American Optical Company through the American Mutual Liability Insurance Company.

The Industrial Nurse

Educational and Conference Calendar of Interest to the Industrial Nurse

The American Association of Industrial Nurses in conjunction with the Industrial Medical Association, the American Industrial Hygiene Association, and the American Association of Industrial Dentists is holding its 13th Annual Industrial Health Conference at Memorial Hall, Buffalo, N. Y., April 23–29, 1955.

The National League for Nursing is holding its second Annual Convention at Kiel Auditorium, at St. Louis, Mo., May 2–5, 1955. This will be an educational and scientific meeting.

Dr. O. Tod Mallery, Jr., Director of Industrial Health at the University of Michigan, will conduct a one day Institute for Industrial Nurses at Boston College, Boston, Mass., on Saturday, May 21, 1955.

The University of Alabama School of Nursing at Tuscaloosa, Alabama is offering a two-week, two-semester hour course in "Nursing in Industrial Health Service," July 18th to July 30, 1955.

Useful Publications for Industrial Nurses

THE NATIONAL Health Council publication, "Directory of Member Organizations," is available at a charge of 50 cents from the National Health Council, 1790 Broadway, N. Y. 19, N. Y. This booklet contains useful information concerning the scope of activities, the Central Office and the Executive Officers of the voluntary health agencies in the United States.

"Health Maintenance for Greater Efficiency," may be procured from the Superintendent of Documents, U. S. Government Printing Office at Washington, D. C. for 25 cents.

It is becoming increasingly clear to the business executive that the best way to meet the problem concerning his workers' health is to keep his employees well. Experience with health services in plants has indicated that losses due to sickness absenteeism can be reduced by one-third to one-half. This does not take into consideration the increased efficiency brought about by the proper treatment or counseling of the employee who was only half sick but remained on the job.

The maintenance of plant machinery and equipment has long been a function of recognized value in the business firm. The maintenance of the health of employees—probably the firm's most costly investment—is equally important.

Industrial First Aid

INDUSTRIAL FIRST AID is defined as the emergency handling of any accident or illness, or the care of any accident or illness requiring industrial treatment and provided not more than one initial and one revisit is necessary. Serious injuries or illnesses are treated pending the arrival of a physician.

In an emergency, anyone may render first aid. However, to insure the best care possible and avoid unnecessary delay, certain essentials in procedure, personnel, and equipment are necessary.

Requirements are:

1. Trained First Aid Personnel.
2. Adequate Supplies and Equipment.
3. A fixed procedure for handling persons in need of prompt medical care.

Personnel

A first aider should have training through one of the following sources: American Red Cross; U. S. Bureau of Mines (for miners and tunnel workers); U. S. Army, Navy or Air Force; Fire, Police, or Civilian Defense Departments; qualified medical personnel, such as consulting physician or nurse.

A first aider should: 1. Show interest and be intelligent; 2. Be available at all times. Trained first aid relief

For NON-TOXIC DUSTS EXCEPT FREE SILICA

It's foolish to breathe dust and dirt when it can be avoided in thousands of instances by using a face-fitting Martindale Aluminum Mask and replaceable cotton filter pads.

In factory, store, feed mill, etc., these masks offer excellent protection against over 400 dusts such as wood, coal, grains, rust, paper, insect powders, etc.

Made of soft rolled aluminum, masks weigh less than ½ oz. They permit free speech, clear vision, easy breathing. Only clean gauze touches the skin. WORKERS LIKE THEM.

MARTINDALE PROTECTIVE MASKS $.30 each
No. 1 Refills (Standard wt.) .02 each
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Write for quantity discounts.

MARTINDALE ELECTRIC CO.
1397 Hird Ave., Cleveland 7, Ohio

(For details, use Key # D-31 on card on page 85)

should be provided; 3. Be a woman if the majority of the employees are female; 4. Be under the supervision of a physician.

Location

The first aid area should be: 1. Located near the source of accidents if possible; 2. Plainly marked; 3. Well lighted; 4. Near toilet facilities and a sink with hot and cold running water; 5. Located where a reasonable amount of privacy and quiet can be expected; 6. Easily accessible to the first aider for supervision and maintenance, so that self-treatment can be eliminated and a minimum of time lost in rendering treatment.

Equipment

1. Wall cabinet and/or first aid kit.
2. Chair or stool.
3. Small table with drawers on which records may be kept.
4. Waste receptacle with step-on cover.
5. Liquid soap dispenser and paper towels adjacent to the sink.
6. A bulletin board giving the following information: (a) Name of First Aider and his department and that of Assistant First Aider; (b) Name and telephone number of the doctor on call; (c) Name and telephone number of the nearest hospital; (d) Panel of neighborhood doctors with telephone numbers for use if the plant physician cannot be reached; (e) Workmen's Compensation Notice if required in State.
7. A first aid manual should be available.
8. Record forms for recording accidents and treatments.
9. Stretcher to be placed in white oil cloth, canvas, or box, and hung in a conspicuous place. It should contain:

(a) 1 blanket

(b) Small box containing: 1 roll of 3-yd. sterile gauze; 2 rolls of 2" bandage; 1 pair scissors; 2 aromatic ammonia inhalent ampules; 4—2 x 2 sterile gauze pads; 2—4 x 4 sterile gauze pads.

This equipment should be inspected monthly and missing articles replaced

Supplies

1. First Aid Cabinet and/or kit:
   - Tr. of green soap—small bottle
   - Rubbing alcohol—1 pint
   - Skin antiseptic—non-toxic—small bottle with glass app.
   - Adhesive remover—small bottle
   - Eye solution—small bottle, eye cup and separate eye dropper to be cleaned before and after use
   - Aromatic ammonia ampules—box
   - Gauze—3" x 3" sterile packages—6
   - Bandage—Gauze—1", 2", 3"—2 each
   - Triangular bandage—1
   - Adhesive finger bandages—1000
   - Bicarbonate of Soda ½ pound
   - Burn medication
   - Elastic bandages 2"—4
   - Adhesive—1"—2 rolls
   - Applicators—small package
   - Cotton absorbent—small package arranged to keep surplus cotton clean
   - Tongue depressors—6
   - Splints—Basswood—3
   - Safety pins—6
   - Scissors—1 bandage and 1 skin
   - Splinter forceps
   - Hand magnifying glass
   - Paper cups—6
   - Paper tissues—1 box
   - Salt
   - Analgesic—Aspirin—small bottle
   - Calomine lotion—small bottle
   - Emesis basin—2

   Additional supplies should be added when a special hazard exists.

2. Additional supplies desirable but not essential for all locations: Hot water bottle or heating pad, Ice cap, Safety razor and blades, Assorted jars and basins, Thermometer, Hot plate and covered pan, Enamel basin for hand or foot soaks.

Records

1. The First Aid Day Log is a basic record. Notations should be made in a chronological order and in ink for all treatments or advice given, whether it be for an occupational or non-occupational reason.
2. A Monthly Summary of Reported Cases can be compiled from the day log.

General Procedures

1. Maintenance and use of First Aid equipment and supplies.
   (a) The First Aider should have time to keep the equipment clean. It should be inspected at monthly intervals using a check list of supplies as an inventory.
   (b) Labels should be legible. Nothing should be used from an unlabeled bottle. Bottles should be well stoppered.
2. Procedure for handling cases:
   It is desirable that there be a fixed procedure for handling persons in need of prompt medical care. When a serious injury occurs, unless such a procedure exists, there is a tendency toward confusion with the result that the needed care is greatly delayed and its effectiveness is reduced.
   Precise location of the First Aid Cabinet or Kit should be known to all employees.
   Every employee should know the type of medical service available.
   The First Aiders' names and departments should be posted in a conspicuous place.
   No one except those designated should be permitted to use the first aid equipment or give first aid unless the situation is very unusual.
   First aid cabinet and/or kit should be closely supervised and unlocked as the key may be lost or misplaced at an inconvenient time.
   A small amount of reserve supplies should be kept on hand.
   First aid cabinet and/or kit should be kept immaculately clean and well stocked at all times.
   Records should be kept of every treatment or advice given. The record should be made at the time of the accident or treatment.
   Follow-up on individuals with injuries should be done the following day.

Lead Absorption

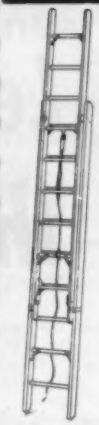
(Continued from page 47)

week intervals until his lead level is safe.

The program also provides environmental control and worker education. Important features of it are proper ventilation, use of dust clothing and protective equipment, floor wetting and drainage, adequate sanitary facilities, eating quarters segregated from lead areas, separate lockers for work and street clothing, good plant housekeeping and teaching supervisory personnel and workers how to avoid undue exposure.

BABCOCK

Ladders



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Singles
Stepladders

Built for safety and service. Industrial ladders of *Top-Quality* material and workmanship.

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BE SURE BE SAFE BUY BABCOCK

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(For details, use Key # D-32 on card on page 85)

Knit-lined PIONEER Stanzoils®

At home a dog offers its owner a daily example of real comfort. PIONEER's objective in designing Stanzoil Duplex Industrial Gloves is to give those who wear them the same kind of comfort at work. For comfortable hands are busy hands, and protected hands are healthy hands.

Where comfort, maximum protection, tensile strength and abrasion, tear, aging, flame and heat resistance are important, and a safe non-slip grip necessary . . . where resistance to alcohols, acids, bases, oils, amines, greases or ketones is essential . . . where all these specifications form the basis for your buying decision, there's only one answer . . . PIONEER's Neoprene Stanzoil Duplex Gloves.

Pick the best, most economical glove for the job from 32 PIONEER styles (including neoprene, rubber and plastic gloves), weights, sizes, and colors shown in the "PIONEER Industrial Glove Catalog."

NL-42 Duplex is a *heavy weight* elastic knit-lined glove of oil, acid resistant neoprene with straight fingers and non-slip grip. Sizes 10, 11, in a 12" length.

the PIONEER Rubber Co 244 Tiffin Road Willard, O., U.S.A.

Quality Gloves for over 35 Years

(For details, use Key # D-33 on card on page 85)

OH YES, THEY WORK HERE TOO . . .

RECENTLY, A LARGE cleaning plant and a chemical plant had perfect safety records broken by severe office accidents. Manufacturing management often forgets that office workers are open to safety hazards too. In this case, 4 secretaries slipped, fell and suffered fractures on floors or stairways. Eagerness to maintain a good safety record in the plant is no excuse for overlooking the hazards in your office.

Learning . . . . . the hard way

GUARD TAKEN OFF . . . HAND TAKEN OFF . . .

A SERIOUS accident occurred in a midwestern tannery a short time ago. An automatic machine took off the right hand of its operator. The circumstances around the accident bear looking into.

When a guard was originally put on this machine it was discovered that it cut down the production of the machine. Since there was no knowledge of injuries previously on this type of machine, the guard was taken off. The operator's hands didn't have to come close to the machine it seemed.

The operation, unguarded, continued for a year without even a close call. Then a new operator was placed on the machine. The first day the employee was learning the operation his hand caught in the machine. Probably, in his excitement he forgot to press the foot release lever. It could be called inattention, inexperience, or even lack of confidence . . . but the result was the same . . . the loss of a hand.

The proper guard is now in place. The machine will instantly release

when a man's hand hits the barrier guard. Production may even be a bit slower, but. . . . Oh yes, since the accident the tannery has been informed that there have been other mishaps of a similar nature in an eastern tannery.

REACH . . . BUT DON'T LEAN!

A CARPENTER working on the roof of a building called for his level. The foreman threw the level and the carpenter fell while leaning over to grab it. He is now a paraplegic. The laws of gravity are known to everybody. Applied to the human body, they mean that when the center of gravity of a person passes outside the center line of his legs, he will fall. Watch a steelworker in the setting up gang. He will reach for a piece of steel being hoisted to him, but he will never lean over. If he cannot reach it while standing erect, he will let the steel go past him.

plication of ng Fluids

E OF THE widespread and sing interest in the applica- tting fluids as a fog or mist ack of factual information bject, the ASTE Research mmittee is sponsoring an ion into such applications. s of this research project ermine the advantages and s of the method, obtain tive metal cutting per- data, outline fields for udy as indicated by the re- he project and explain in- esults in terms of current n fog application.

hase of the project will be of the literature covering ogs as applied to cutting bearings, and as used in fer generally. Since valu- mation has been published f these applications inde- , it is assumed that a com- f the known information le new keys to the physical, nd lubricating effects of fogs.

ory tests will be conducted manner that the data ob- ll be directly comparable obtained with more con- methods of applying cut- . Controlled variables in igation will be: workpiece utting speed, feed, depth ol material and configura- types of cutting fluids and used with continuous and nt cuts. Methods of, and t for, generating fogs will udied. Uncontrolled vari- will be measured include: workpiece surface finish, nerated, temperatures in- power required.

rent project resulted from by the Machine Tool and utting Laboratories of setts Institute of Tech- Trained personnel of the s will perform the neces- tigations, follow through is and prepare a report.

VI-LAN CLEAN

dispensers

on the job and in wash rooms will prevent the menace of

dermatitis

. . . lost man hours and lost profits!

This new antiseptic all-purpose skin cleanser contains ACTAMER, a non-toxic bacteriostat, perfected by Monsanto Chemical Company, exerting a powerful inhibitory action against harmful skin bacteria for 48 hours after use.

VI-LAN CLEAN does what ordinary soaps can not do. It removes greases, oils, paint, acids, graphites, printing inks, asphalt, rubber, gasket cements and other industrial soils and sediments, and provides the prophylaxis inhibiting the germs which too often put employees out of commission.

So, serve and protect your employees with VI-LAN CLEAN—install the new VI-LAN CLEAN dispensers in every wash room and on critical on-the-job locations. MAY BE USED WITH OR WITHOUT WATER.

To fill dispensers VI-LAN CLEAN is packed in polyethylene bags, allowing you to release any amount of the cream simply by finger pressure on the bag without waste. This container also may be used conveniently as a portable dispenser on trucks and outside jobs.

Also available in convenient pint, quart and gallon containers for home and shop use.

Write for descriptive folder today!

DAMERON enterprises, inc.
427 So. 20th Street
Louisville 3, Kentucky

(For details, use Key # D-34 on card on page 85)

Sanitation Seminar

A TWO DAY trade show and seminar devoted exclusively to cutting costs and increasing efficiency in building sanitation is announced by I. Edward Brown, Inc. There will be over 50 exhibits of sanitary supplies at the Hotel New Yorker in New York City on April 13 and 14. Hours on the first day will be two to five P.M. and seven to ten P.M.; on the second day, from noon to six P.M.

The seminar program will cover all aspects of building sanitation. Many sanitation experts will be available to discuss problems and answer specific questions. Movies will show how to train custodial workers in efficient cleaning methods. Free admission cards can be obtained by writing to: I. Edward Brown, Inc., 440 Canal Street, New York 13, N. Y.

WHAT HAPPENS NEXT?

If management has been wise, a fire tragedy will be stopped before it starts...if not, in 20 minutes extensive destruction and total loss could readily be the result.

First-rate fire protection is essential to the continued success of any business. With C-O-TWO Smoke or Heat Fire Detecting Systems, plus C-O-TWO High Pressure or Low Pressure Carbon Dioxide Type Fire Extinguishing Systems, as well as PYRENE Air Foam Type Fire Extinguishing Systems for specific outdoor locations, your plant can have fast, positive round-the-clock fire watchman service simultaneously at each fire hazard point . . . a fire tragedy is stopped before it starts.

Furthermore, there is a personal sense of responsibility inherent with PYRENE—C-O-TWO Fire Protection Engineers that assures you of fully adequate firesafety . . . a definite plus in your behalf. Whether it's fire detecting or fire extinguishing . . . portables or built-in systems . . . PYRENE—C-O-TWO means top quality backed by experienced engineering that results in operating superiority for you at all times.

Act now . . . don't take unnecessary chances with your investment any longer . . . the extensive experience of PYRENE—C-O-TWO over the years is at your disposal without obligation. Remember . . . a plant-wide fire protection survey skillfully executed today could be the means for greater profits tomorrow.

PYRENE — C-O-TWO

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Sales and Service in the Principal Cities of United States and Canada

COMPLETE FIRE PROTECTION

portable fire extinguishers . . . built-in fire detecting and fire extinguishing systems

CARBON DIOXIDE • DRY CHEMICAL • VAPORIZING LIQUID • SODA-ACID • WATER • CHEMICAL FOAM • AIR FOAM

(For details, use Key # D-35 on card on page 85)

The Fire Front

January Fire Losses

ESTIMATED FIRE losses in the United States during January amounted to $75,265,000 the National Board of Fire Underwriters has reported.

According to Lewis A. Vincent, NBFU's general manager, this loss represents a decrease of 13.0 percent from losses of $86,493,000 reported for January, 1954, and a decrease of 10.3 percent from losses of $83,881,000 for last December (1954).

These estimated insured losses include an allowance for uninsured and unreported losses.

In-Plant Fire Brigades

NINE OUT OF TEN industrial fires can be controlled by a combination of trained personnel backed up with adequate portable fire-fighting equipment, according to the Fire Protection Institute. This conclusion is based upon results of a survey of safety directors from nearly 500 large factories in the United States.

These safety directors reported that 87 percent of the 1,759 fires on their properties in one year were put out, while they were small, by plant fire brigades and trained plant personnel armed with fire extinguishers and other portable fire-fighting equipment.

Significantly, the largest companies not only showed the greatest interest in equipping and training company fire brigades and personnel, but also reported the lowest ratio of fire losses. Nearly 90 percent of all plants queried in the survey reported they had established, well-equipped and trained fire brigades or plant protection (security groups). Nearly 60 percent of them have both. One third of the factories reported no fires at all during the 12 months.

Despite heavy reliance on their own manpower and equipment, industry safety directors reported that except in exceptional cases where a fire was extinguished almost immediately, it is standard practice to notify the local professional fire department, so that their own forces can be backed up with reserves in case the blaze gets out of hand. They report that the municipal departments do not object to answering a call and finding that the fire has already been extinguished.

Loss of working time due to these fires was extremely low. This was considered by the safety directors of great importance both to the employees and to management. As one director commented, "Of business seriously damaged by fire, 43 percent of them never resume operation. Of the remaining 57 percent which get back on their feet, 28 percent of them fail within the next three years. While this may not apply in the same degree to large corporations such as ours, certainly our employees have much to lose if one of our plants is burned out. Sometimes a corporation has found it economically advisable to rebuild in another location and the employees are out of work if they can't move to the new city."

New Fire Truck's Ladder Goes Up in 7 Seconds

THE NEW 59-foot, 7-inch "hook and ladder" fire truck, equipped with a 75-foot aerial extension ladder, is the first of a record order of 25 aerial ladder trucks being delivered to the New York City Fire Department. The truck's aerial ladder can be catapulted into the air in 7 seconds and fully extended within 19 seconds of its release. This type of truck is tailor-made to New York City firefighting needs.

Picture by courtesy of Four-Wheel Drive Co.

Value of Fire Brigades

The industrial safety directors were almost unaminous in their opinion that plant fire brigades furnish the least expensive "first line of defense against fire," although several admit that they have had a difficult time convincing their management. This again is mostly a trouble found only in smaller companies.

Several questionnaires mentioned the fact that quite a number of industrial plants are located some distance from the heart of town and nearby fire departments. They stated that in this case, the establishment of a well-equipped company fire-fighting force larger than generally thought needed is vital to plant safety and continued production.

One comment by a safety supervisor was directed at his local community. He wrote, "If we had called out the Municipal Fire De-

"Fire-Chief Finished"
WELDING CURTAINS—SALVAGE COVERS
to confine the welding operation to a given area
used to protect machinery, and other equipment from water, dust and snow.

MADE OF CANVAS
impregnated with Hooper's Fire Chief treatment under their patent which carries the Underwriters' Laboratory seal.
A. Smith & Son Inc.
Established Eighteen Hundred Sixty-Seven
MANUFACTURERS OF REEVES STRETCHER
Ridge Ave. at Green Philadelphia 23
"If It's Made of Canvas, We Make It"
(For details, use Key # D-36 on card on page 85)

STOP IRRITANTS IN CUTTING OILS, SOLVENTS, THINNERS, PAINTS
PREVENTO
PROTECTIVE CREAM No. 200

The time to deal with dermatitis is BEFORE it starts. Irritants present in industrial processes and products may lead to serious skin infections.
CONTAINS G-11 BRAND OF HEXACHLOROPHENE
PREVENTO No. 200 is an antiseptic skin-protecting cream which guards against bacteria entering tiny skin abrasions. Spreads evenly, easily and has a delicate, agreeable aroma. Shop employes like to use it and appreciate this added safety measure.
Literature on Dolge products relating to the prevention of dermatitis on request, or consult your Dolge Service Man.
FOR FREE SANITARY SURVEY OF YOUR PREMISES SEE YOUR DOLGE SERVICE MAN
dependable DOLGE
WESTPORT, CONNECTICUT
(For details, use Key # D-37 on card on page 85)

partment for every fire we had last year, the additional taxes to maintain the department would have cost us and the taxpayers more than the cost to maintain our company fire brigade. We found out that we not only save money, but also provide ourselves with an immediately available force to fight blazes. In addition, when the Municipal Department answers our calls, it leaves the rest of the community virtually unprotected because we are some distance from the fire house."

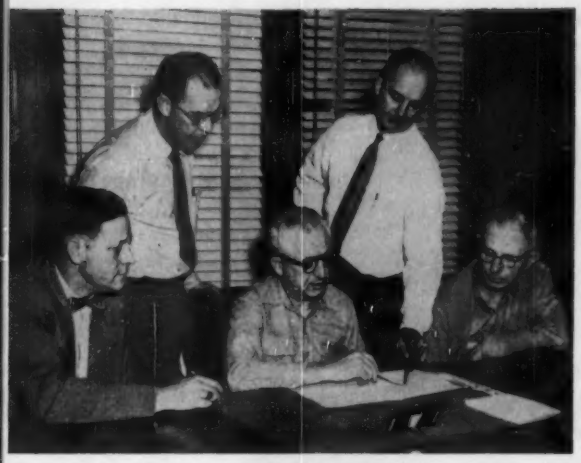
Value for Small Plants

The Fire Protection Institute suggests that smaller industrial plants study the economics of providing themselves with plant fire brigades as it is in the smaller plants that the greater fire losses apparently occur. It pointed out also that large industrial plants consider their fire brigades as an aid to employee morale as well as insurance against fire destruction.

Although individual company reports were furnished to the Fire Protection Institute on a confidential basis, a few of the industries surveyed included: chemical plants, sugar refineries, oil and gasoline refineries, atomic energy plants, steel, copper and aluminum fabricators, automobile assembly plants, paint manufacturers, airplane factories, moving picture and radio studios, flour mills, soap manufacturers, electrical manufacturers, distilleries, shipyards, machine tool works, pharmaceutical plants, rubber manufacturers, paper mills and even manufacturers of fire engines and extinguishers. (Yes, they had fires too, but they put them out with their own products.)

NFPA Annual Meeting

The 59th Annual Meeting of the National Fire Protection Association will be held at the Hotel Netherland Plaza, Cincinnati, Ohio, May 16–20 inclusive.



Engineer points out carbon-dioxide installation.

Learned:

One Fire Lesson...

This Valuable Machine . . .

Is Now Protected . . .

By Fire Smotherer

IF YOU DON'T THINK that protection of vital pieces of production equipment against loss or damage by fire is important, talk to Meyer Kirstein, president of the Hartland Tanning Co., Hartland, Maine. Mr. Kirstein says that in addition to a production unit's fire loss, one has to consider costs of water damage to the plant and work-in-process, lost production expenses, and the cost of having the vital production operation performed elsewhere while damage is repaired . . . if you're going to keep the fire-struck plant producing.

These considerations completely ignore the possibility of injury to employees resulting from the fire and the chance that a fast spreading fire could engulf the entire plant.

He should know. His Hartland tannery experienced a flash fire during the summer of 1954 which consumed almost 50 thousand dollars of property and knocked out the tannery's one spray unit and oven dryer which coated "sides" with a coating which seals and gives them a high polish finish.

Here's what happened. An arcing electric motor ignited suspended, minute particles of half-second butyl nitro cellulose in the spray unit and residues on the conveyor. With an almost instantaneous mushrooming effect, the fire spread down the entire 96-foot length on the sprayer-drier. The spread of fire was so fast that even with the intense heat generated, the fire outdistanced opening water sprinkler heads above the assembly. All told, 76 heads actuated.

The water spray kept the fire down, permitted it to be extinguished within an hour, and limited fire damage to adjoining sections of the plant. However, water damage to work-in-process and machinery was most apparent just outside the immediate fire area and on lower floors where the water deluge accumulated.

Mr. Kirstein pays tribute to his insurance underwriters by saying, "They were here immediately after the fire, offering assistance and surveying the loss for settlement. While no insurance can cover some of the secondary expenses of a fire, their aid and counsel mate-

rially helped in re-starting production in the shortest possible time." It is interesting to note that plant efficiency was cut 25 percent while the machine was out.

Immediately plans were made to replace the destroyed unit with a new tandem, spray units and oven dryers. Simultaneously, extinguisher engineers were called upon to design equipment that would immediately detect a fire in the new unit and cause it to be smothered by carbon dioxide before serious damage to the machine could result or sprinkler heads open.

The new, recently installed $40 thousand dollar machine is 12 feet wide, 126 feet long, and an average of 5 feet high. It can process 350 sides an hour.

Operation of Unit

Sides are hand fed onto a wire mesh conveyor, pass through the spray unit where a rapidly horizontally-rotating, 4-armed and -headed sprayer coats them with butyl nitro cellulose. Then they are carried by the conveyor through the steam heated, 170° F., oven dryer. At the end of this tunnel they are picked up by another conveyor and the spraying-drying operation is repeated with duplicate treatment.

The new installation was designed to minimize the possibility of fire. Independent conveyors limit the spread of flammable residue; power blowers whisk away explosive vapors continuously; all electrical equipment is of the explosion proof type and other electrical-static safeguards are provided; finally, the assembly itself is scrupulously cleaned once a week.

In spite of these precautions should a blaze occur, a carbon dioxide fire extinguishing system, made by Walter Kidde & Company, stands ready to put it out automatically, 24 hours a day.

The sudden heat acting on a rate-of-temperature-rise fire detectors mounted throughout the unit immediately trips nine, 75-pound cylinders of the fire smothering gas. The pressurized gas escapes from its cylinders and is routed through piping to multijet nozzles in the spray units, in the exhaust air ducts, and others flanged into oven dryers. The volume of carbon dioxide introduced lowers oxygen content to a point which will not support combustion, and the fire is smothered in seconds.

Equipment Shut-Down

Built into the piping network are pressure-operated switches and trips which are actuated by the passage of the gas. They cause electrical power for the sprayer to be turned off, stopping the conveyor, spraying equipment, exhaust fans, and recirculating blowers. They also close all dampers.

In addition to its superior fire extinguishing characteristics, carbon dioxide has other qualities which Mr. Kirstein claims as an advantage. "Being an inert gas," he states, "it cannot damage the sprayer-driers, electrical equipment or work-in-process. In addition, as it is eventually absorbed into the atmosphere following discharge, it leaves no mess to be cleaned up following the blaze."

Pictures by courtesy of Walter Kidde & Company.

Code for Maintenance of Fire Extinguishers

THE FIRE PROTECTION Institute has announced the publication of "Safety Code for Inspecting, Recharging and Maintaining Portable Fire Extinguishers." This book was prepared as a public service by the Fire Equipment Manufacturers' Association, Inc.

Neglected Extinguishers

Thousands of fire extinguishers throughout America are useless in an emergency. Somebody bought them and forgot them. Neglected, many without extinguishing agents, others corroded by years of abuse and disuse, they are unable to cope with the potential disaster of fire and its heartaches.

Moving on a planned course, the seventeen member companies who belong to the Fire Equipment Manufacturers' Association pooled their knowledge and experience. The code is an industry prepared and approved guide for inspecting, recharging, testing and maintaining all types of portable fire extinguishers.

These books can be obtained by writing the Fire Equipment Manufacturers' Association, 813 Clark Building, Pittsburg 22, Pennsylvania. The cost is 50¢ each.

Industrial Fire Schools

THE INDUSTRIAL firefighting school of the Ansul Chemical Company, at Marinette, Wis. has scheduled twelve different three-day classes for the spring and summer of 1955. The first class is scheduled for May 23–25, and the final one September 19–21.

The courses are open to industrial plant safety personnel, fire marshals, municipal and military firefighters and other interested personnel. Registration is limited to 25 persons in each class, with applications accepted on a first-come, first served basis.

During the course of instruction on the company's 10-acre fire test field, the students are taught the latest techniques of fire extinguishment with various extinguishing agents. Students are also encouraged to bring any special fire extinguishing problems to the school.

Dates for classes for which applications are now being accepted are May 23–25, June 13–15, June 20–22, June 27–29, July 18–20, July 25–27, August 15–17, August 22–24, August 29–31, September 12–14, and September 19–21.

Participants must pay their own transportation and board while in Marinette. For further information, write Director Fire School, Ansul Chemical Company, Marinette, Wisconsin.

Fighting Ice and Smoke . . . as well as Fire

. . . takes good equipment and training

ONE SUB-ZERO DAY last winter in Fargo, North Dakota a large hotel reported a blaze on the first floor. Firemen responding found the second and third floors so thickly blanketed with smoke they could not see. Ice formed thickly too, on firemen's helmets, as hoses went into play.

It was then that good equipment and intensive training paid off. The oxygen deficient atmosphere of the smoke-filled floors made ordinary masks useless, but two firemen equipped with canister-type, oxygen-generating apparatus went through the choking gloom to bring out three hotel guests who would probably have been asphyxiated otherwise.

As for the ice . . . firemen had an answer for that, too. Their new helmets of laminated plastic could be rid of accumulations of ice more easily and quickly than their old ones. Not only that, a big factor in North Dakota's winter climate, but the helmets also had a long service life, high strength and shock absorbing qualities. *(Cont'd on next page)*

. . . says this chief

Fargo, North Dakota Fire Chief Wells (right), faces unusual fire problems in cold climate of his city. Ice forms on fighters' helmets in picture (at top), but is easily removed because of plastic construction of hats. Smoke is also a serious distraction for firemen, but department whips it with self-contained masks. Picture (immediately above) is sample of a very important part of department's success formula . . . adequate training in the use of all types of fire equipment.

"Simplest and Safest"

EMERSON
Resuscitators

SIMPLE to operate.

SAFE for adults, children, or infants.

ACCEPTED by the American Medical Association since 1952 for use *by laymen.*

PROVIDE SUCTION, alternating with pressure, to give vital aid to the circulation. Write for free *Medical References on Resuscitation.*

Gas poisoning (coal, illuminating, industrial, monoxide)
Asphyxia of new born babies
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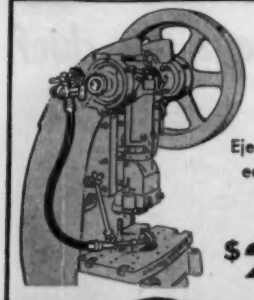
(For details, use Key # D-38 on card on page 85)

3 DEPENDABLE AIR OPERATED UNITS BY LITTELL

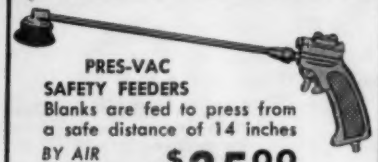
NEWEST LITTELL UNIT
Wins Immediate Approval

SHEET LIFTER
for handling sheets of steel, glass, plywood, boxes, cabinets
BY AIR
$32.00

LOST FINGERS ARE COSTLY



AIR BLAST VALVES
Ejects parts at each stroke of press
BY AIR
$29.00



PRES-VAC SAFETY FEEDERS
Blanks are fed to press from a safe distance of 14 inches
BY AIR
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SAVE MONEY • SAVE TIME
SAVE HANDS • SAVE FINGERS

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Speed with Safety

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4187 RAVENSWOOD AVENUE
CHICAGO 13, ILLINOIS
District Offices: DETROIT and CLEVELAND

Write for FREE Catalog

(For details, use Key # D-39 on card on page 85)

A few months later, firemen returned to the hotel again, this time to fight a much larger fire. The alarm had been delayed, 9 to 20 minutes, and the blaze had gained great headway when the fire fighters arrived. Again, good equipment and training won out. Firemen were able to rescue 155 persons, many from smoke-filled upper floors.

In talking about his department, Fire Chief Fred J. Wells stresses the particular importance of training and drill in the proper use of excellent equipment. He and his associates take what seems to be a pretty "common sense view" of fire-fighting equipment old and new. They invest "work, sweat, thought" in the constant and familiar problem of getting the best equipment possible and keeping it in tip-top shape, while living within a not inexhaustible budget. Any piece of equipment must not only be good, it must be essential . . . and, it follows, carefully maintained . . . and used.

Development Story

To illustrate this attitude, here is the story of how Chief Wells and his staff decided on and have used the self-contained, canister-type breathing apparatus. After a trip to the Fire Department Fire Instructors Conference in 1951, Chief Wells and his assistants decided that enough breathing equipment was not being used in the department, and that what was on hand was not being used properly. They began putting more and more emphasis on adequate training in, and utilization of, masks and other modern fire-fighting and protective equipment.

This led to the firm belief that firemen, when wearing any ordinary masks, cannot give prompt and full attention to fire-fighting and rescue work. They must worry whether there is sufficient oxygen to survive in the atmosphere.

The new oxygen-generating apparatus seemed like an excellent answer to the problem, since it enables firemen to work safely in con-

(Continued on page 78)

inside the trade

A new division to create and conduct special industrial incentive campaigns has been formed by Cappel, MacDonald & Co. of Dayton, Ohio. Under its director, William J. Niederauer of New York City, the new division will design campaigns offering merchandise and travel awards in accident-prevention, absenteeism-reduction and employee suggestion programs. Headquarters for the newly-created division are at 1 East 57th Street, New York City.

Ansul Chemical Company has announced the appointment of Richard Baker as Public Relations Director and Brad Sebstad as Advertising Manager. Baker, formerly Advertising and Sales Promotion Manager, will also serve as a special assistant to Ansul President, Robert C. Hood. Sebstad will be in charge of the company's advertising, sales promotion, publicity and publications programs.

With plans completed to devote the bulk of its resources to the research, development, manufacture, and sale of medical gases, therapy oxygen, and related apparatus, the Ohio Chemical & Surgical Equipment Co. (A Division of Air Reduction Company, Incorporated), has announced the discontinuation of the sale of its line of sterilizers, surgical lights, and operating tables. Arrangements have been made with the American Sterilizer Company to service the discontinued sterilizers, lights and tables. Ohio's own organization will continue servicing for several months until transfer of the function has been completed.

Princeton Paint Laboratories have assigned to John B. Moore Corp. the marketing and manufacturing rights to two new types of corrosion inhibitors, for both ferrous and non-ferrous metals.

Aluminum Company of America distributors are offering a complete line of aluminum sign materials. In conjunction with this new service for customers, Alcoa has announced the appointment of Melvin R. Schuster as Market Supervisor for the sign industry, a new position with the company.

Under the new plan, Alcoa distributors throughout the country can supply sign blanks of various shapes and sizes, complete with aluminum fasteners for proper construction.

A new assembly plant has been opened in Independence, Iowa by Micro Switch of Freeport, Ill., a division of Minneapolis-Honeywell Regulator Co., to expand its production of mercury switches and snap-acting switch products.

W. W. Gilmore, president of the division, said that some new products may be added during 1955 as tooling becomes available.

Mr. Gilmore also announced the establishment of new sales and engineering offices in Phoenix, Charlotte and Denver. The new facilities will be located in Honeywell sales and service offices and will be managed by former Micro Switch division field engineers. Ralph C. Froehlich, formerly of Los Angeles, heads the new Phoenix office; Donald S. Schultz is being transferred from Philadelphia to take charge of the Charlotte office, and Richard J. Petersen, formerly of Minneapolis, is in charge of sales and engineering in the Denver area.

The appointment of W. H. Parkinson as Advertising, Publicity, and Sales Promotion Manager of Quacker Rubber Corporation has been announced by G. A. Dauphinais, Vice President and General Manager.

Mr. Parkinson has had eight years experience in the industrial advertising field, including a year as Assistant Advertising Manager at Quaker Rubber. He will be in charge of advertising, publicity, and sales promotion for both Quaker Rubber Corporation and Quaker Pioneer Rubber Mills, a recent acquisition of H. K. Porter Company.

Oxy-Catalyst, Inc., has opened an office in Los Angeles, Calif., to serve the West Coast. This is the first branch office of the Wayne, Pa. firm, which develops and manufactures catalytic devices for air pollution control and waste heat recovery. The new office is located in the Guaranty Building, 6331 Hollywood Blvd.

Alfred I. Bratton, a catalyst engineer, will be manager of the new branch office.

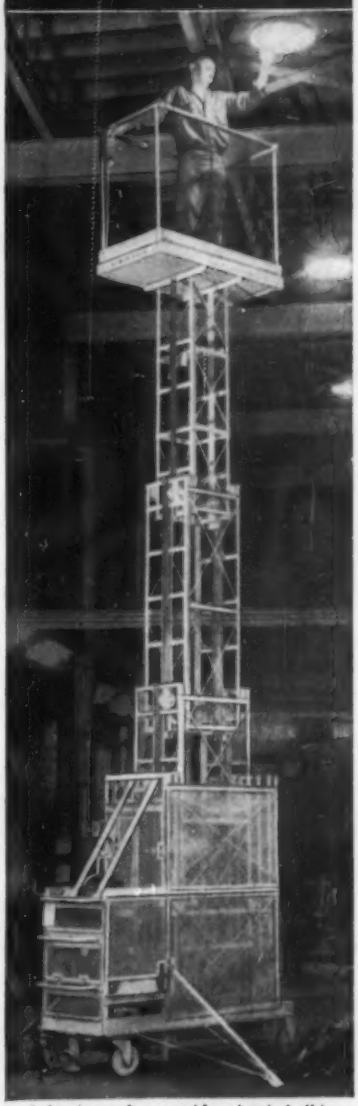
Pittsburgh Plate Glass Company has announced that it has executed an agreement providing for the purchase of Barreled Sunlight Paint Company with paint-producing plant and headquarters at Providence, Rhode Island. The purchase will not become effective until all stockholders of Barreled Sunlight Paint Company have approved.

According to E. D. Peck, vice-president of Pittsburgh Plate Glass Company, Barreled Sunlight will continue to operate under its own name as a wholly-owned subsidiary of Pittsburgh Plate Glass Company. It will be managed by its present staff headed by Wilbur L. Rice, president. The firm has approximately 150 employees in its sales and manufacturing operations.

THE MAN WHO FEELS SAFE WORKS BETTER

Economy HI-REACH TELESCOPER

ENGINEERED FOR STRENGTH STABILITY AND SAFETY



Safety is our first consideration in building Hi-Reach Telescopers.

During the past quarter of a century of making Hi-Reach Platform Telescopers, our engineers have constantly improved the mechanical construction to obtain maximum stability, smooth time-saving lifting action, and safety.

Standard Models available from 10'-9" to 35 ft. high, and custom-built units as high as 100 ft. if you like.

ECONOMY ENGINEERING CO. EST. 1901
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(Use Key # D-40 on Inquiry Card on page 85)

Daylon
safety ladders

approved and labeled by Underwriters' Laboratories

The accepted standard for ladders, Daytons are built of selected, tested, kiln-dried Sitka Spruce. Designed to latest specifications of the American Standards Association Safety Code.

DAYTON Fig. 200

A well constructed step ladder built for heavy industrial use to stand maximum abuse. Can be supplied with fully rodded back for extremely heavy-duty jobs. Bucket rack optional. All hardware zinc-plated. Sizes 4' to 16'.

DAYTON Fig. 102

A strong ladder for general industrial use. Side rails are 1⅝" x 2¾" (rails available 1⅜" x 3¼" if desired).

DAYTON Type-H

An extremely rugged ladder, designed and built to meet demand for a platform ladder with millwright back construction. Tool shelf on top. Ladder shoes standard equipment. Folds absolutely flat for easy storage. Features include pinch-proof spreaders, corrosion-resistant zinc hardware, slip-proof treads. Sizes 4' to 16' to platform.

For FREE literature write Dept. G.

Daylon *safety* ***ladder co.***

2339 Gilbert Ave., Cincinnati, Ohio
In Canada—SAFETY SUPPLY CO., TORONTO
(Use Key # D-41 on Inquiry Card on page 85)

Methylamines Data Sheet

A NEW SAFETY data sheet on methylamines has been announced by the Manufacturing Chemists' Association. The 20-page folder, part of a continuing series, covers the properties and essential information for safe handling and use of methylamines.

Copies of the folder, SD-57, Methylamines, may be obtained from the MCA, 1625 Eye Street, N. W., Washington 6, D. C., at 25¢ each.

Plumbing Code

A UNIFORM CODE for plumbing has been approved as the country's first true national plumbing standard. After more than 20 years of development, the code is designed to modernize existing practices and to coordinate the work of plumbing equipment manufacturers, architects, contractors, municipal law makers, building officials and others.

The announcement was made jointly by the American Society of Mechanical Engineers and the American Standards Association. The ASME, with the co-sponsorship of the American Public Health Association, provided the administrative leadership in obtaining approval of the code as the American Standard National Plumbing Code.

According to the sponsors, the code may be used by architects and contractors in the design and installation of plumbing equipment, by plumbing equipment manufacturers in the design of their products, and by states and cities as a basis for regulation and ordinances.

The ASA stresses the fact that the code is not mandatory. It is "national" in the sense that it is distinguished from the multiplicity of different codes which have only local recognition and acceptance and that it is supported by a national consensus. It is intended for those municipalities which need it as a basis for setting local standards that are uniform with those used elsewhere in the nation.

In addition to the sponsors, the following organizations were represented as members of the National Plumbing Code Coordinating Committee: U. S. Department of Commerce, American Society of Sanitary Engineering, Building Officials Conference of America, Conference of State Sanitary Engineers, National Association of Plumbing Contractors, Uniform Plumbing Code Committee, and the Western Plumbing Officials Association.

The American Standard National Plumbing Code, 186 pages, is available at $3.50 a copy from: The American Society of Mechanical Engineers, 29 West 39 Street, New York 18, N. Y., and the American Standards Association, 70 East 45 Street, New York 17, N. Y.

Standards Catalog

JUST PUBLISHED is the 1955 edition of "A List of American Standards." The 48-page publication lists and indexes about 1500 American Standards. There are 210 for construction and civil engineering, 153 mechanical, 272 electrical, 158

safety, 165 textiles and wearing apparel, 251 photography and motion pictures, 74 petroleum products, 69 chemical, 62 metallurgy, 38 gas-burning appliances, 32 drawings, letter symbols and abbreviations, 18 mining, 11 rubber, 10 office equipment and supplies, and a miscellany of others.

A separate section on consumer goods contains an index of standards for household appliances and furnishings, wearing apparel, hobby cameras, etc.

Free copies are available from the American Standards Association, 70 East 45 Street, New York 17.

Portable Tool Manual

In view of the recent rapid trend toward mechanization of all hand labor, a new book, "How to Use Portable Power Tools" by Maurice Reid, is designed as an up-to-the-minute manual for the building and construction trades, maintenance crews, industrial production, wood and metal working shops. It describes all types of standard portable electric tools, newly developed machines, and numerous attachments for specialized jobs. Step-by-step instructions on uses and "tricks of the trades" show the craftsman how to turn out more skillful work faster and with less fatigue than by old hand methods. One hundred eighty instructive photographs make this a practical, basic 200-page guide for all manual workers. Library edition published by Thomas Y. Crowell Company, New York City, at $2.95. Unabridged special editions available at $1.50 each by writing Porter-Cable Company, 55 Exchange Street, Syracuse 8, N. Y.

Air Pollution Control Guide for Industry

Recognizing the need for coordinated action to develop control methods of dust, smoke and fumes, commonly referred to as Air Pollution Control, the American Foundrymen's Society, Des Plaines, Illinois, is issuing a booklet, "Control of Emissions from Metal Melting Operations." It was compiled by the AFS Air Pollution Control Committee, working on an industry-wide project. The material deals with the general subject of air pollution and its control, describing the engineering characteristics of the various types of equipment now in actual service for controlling emissions from metal-melting operations. Typical operating data, obtained from installations of several types of equipment are included.

This pamphlet provides foundry management with a guide to the steps necessary for control of air pollution, so that its plant may continue to operate as a "good neighbor," complying with local air pollution ordinances now in effect or, possibly, forthcoming.

Value of the text is enhanced and clarified by practical illustrations, tables and an extensive bibliography. Booklet sells for $1.50 to AFS Members; $2.25 to those who are not members of the Society.

YOU NEED A . . .

DUPOR No. 10

Chemical Cartridge Respirator

Nearest thing to a gas mask! Double filters guard against nuisance gases, smoke, chemical fumes. Available in Code "A" for inorganic gases; Code "B" for organic vapors; Code "AB" for inorganic and organic use. Supplied with Code "B" cartridges unless otherwise specified. Order sample today, $5.00 postpaid.

H. S. COVER, SOUTH BEND, IND.

"Respirators for Industry since 1894"

(For details, use Key # D-42 on card on page 85)

APPROVED SAFETY
guards for all
DANGEROUS MACHINES
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DUST COLLECTORS
for all dusts
PREVENTS FIRES
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ILLUMINATED MAGNIFIERS
for inspection
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INC.
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CHICAGO, 24
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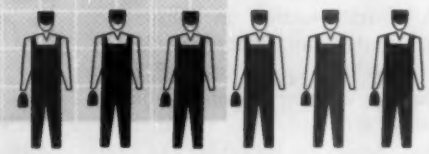
Specialists in the
UNUSUAL
SERVICE IN EVERY
INDUSTRIAL CENTER
(Use Key # D-43 on Inquiry Card on page 85)

SELF-STICKING SIGNS
A complete line of Self-Sticking Accident Prevention Signs in wordings and sizes recommended by ASA and NSA is now available from the W. H. Brady Co. Stocked in sizes 5"x14", 3¼"x14", 5"x9", 2¼"x9" and 2¼"x4½". Stick to any surface. Are put up fast by unskilled help without nails, screws, tools. Write for 16-page Catalog and free usable samples.

Another Brady product, Self-Sticking Warning Stripes and Warning Checks in rolls, lets you mark hazards fast with either diagonally striped designs or checkerboard designs. Applied right off the roll. Eliminate costly hand painting. Made of self-sticking vinyl plastic, acetate fibre and reflective "Bradylite." Stocked in 3 different color combinations in rolls of various widths and lengths. Write for Bulletin #143-A and free samples.

Manufacturer: W. H. BRADY CO.
749 W. Glendale Ave., Milwaukee 12, Wis.
(Use Key # D-44 on Inquiry Card on page 85)

SAFETY ACHIEVEMENTS



WHAT IS SAID to be a world's record for safety in the heavy electrical industry field is the 5,510,000 man-hours chalked up by the Daystrom Instrument plant at Archbald, Pa. The National Safety Council recently awarded the plant a plaque for its unique achievement.

• • •

THE OUTSTANDING safety performance of 1954 among Dravo Corporation operations was turned in by the Electric Shop at the company's Neville Island Plant. The shop was recently awarded a plaque by the company for its record of 455,731 hours without a disabling injury.

• • •

ALL MANUFACTURING plants and research facilities of Celanese Corporation of America came through 1954 with an accident frequency rate of 1.57 lost-time accidents for every 1,000,000 man-hours worked, which was far below the 1953 national average of 7.44 accidents for all American industry.

The company also made an impressive record in fire prevention by reporting an average fire loss of only $59 last year, contrasted with a national average for general industry of $2,529 in 1953.

The company disclosed that the Narrows, Va., fiber manufacturing plant was the 1954 winner of the Harold Blancke Safety Award in the annual inter-company competition. The plant had only two lost-time accidents in the year, during which time approximately 4,000,000 man-hours were worked. The actual accident frequency rate for the Narrows plant was 0.5.

Certificates of Commendation were won by the Narrows; Bridgewater, Va.; Bishop, Texas; Hopewell, Va.; Linden, N. J.; Summit, N. J. facilities and the Central Trucking Division located at Cumberland, Md., for establishing best safety records on a divisional basis. FOR COMPLETING three million man hours without incurring a disabling injury, the Permacel Tape Corporation, New Brunswick, N. J., was presented with the National Safety Council Award of Honor.

• • •

The company also received a certificate of commendation from the New Jersey Safety Council for achieving the 3,000,000 man-hour record during the period from July 27, 1953 to December 1954.

The award winning accomplishment set by Permacel is a new safety record for the Johnson and Johnson organization, of which Permacel is a subsidiary.

• • •

IN ESTABLISHING a new world's safety record in the sheet metals division as established by the National Safety Council, of 7,312,464 man-hours of manufacturing operations without a lost-time injury, the Bridgeport (Conn.) works of the

Remington Arms Company, Inc., maintained a safe working practices tradition that has played a major role in Remington operations for many years.

All of the four plants owned by Remington Arms Company hold world's safety records within their respective divisions of industry. The Bridgeport works' record was amassed over the period that began November 16, 1953.

At Remington's Ilion (N. Y.) plant, where firearms and industrial tools are made and which is included in the miscellaneous iron and steel products division of industry, a world's safety record was established on November 11, 1954, when a lost-time injury brought to a close accident-free operations which totaled 9,069,485 man-hours.

In the pottery industry of the clay products section, Remington's Findlay (Ohio) plant, where Blue Rock targets and target-throwing traps are manufactured, has been operating more than seventeen years without a lost-time injury.

• • •

WORKERS OF Department 21-13 at the Lockheed-operated government aircraft plant, Marietta, Ga., have not had a disabling accident since October, 1951. Their 173-week perfect record now totals more than two million man-hours of accident-free work.

• • •

RECOGNITION OF its safety record has been given the Scottdale, Pa., plant of the Robertshaw-Fulton Controls Co. The plant was recently awarded a plaque by the National Safety Council for 12 months of accident-free operation in the Group C Foundries Division.

• • •

SYLVANIA ELECTRIC Products Inc. has been cited by the Occupational Health Institute for providing its employees with "the best kind of constructive health service, aimed at keeping workers well and reducing accidents and disease."

At a recent ceremony a certificate was presented to Sylvania by Dr. Harold Brandaleone of New York City, regional consultant of the Institute.

In accepting the certificate, Dr. Harry E. Tebrock, Sylvania medical director, said, "Credit is due to our employees and particularly to the medical and safety personnel for the excellent part they are taking in seeing that the program is a success."

The Occupational Health Institute, sponsored by industrial management and the medical profession accredits companies whose health practices and programs meet Institute Standards, such as a stated medical policy; preplacement medical examinations; available facilities for voluntary periodic physical examinations for all employees; a competent consulting staff; attention to sanitation, safety precautions and in-

NOW! REDESIGNED DAVIS D-CARTONS IN SEALED, SANITARY WRAP, WITH EASY-TO-OPEN RED PULL TAB!

Just pull the red tab to unwrap.

The continuous red line across the face of the D-Carton shows that none of the cartons has been opened.

A break in the red line, as at the third carton in the illustration, signals that they have been opened and should be checked for replacement before the contents have been used up.

BAND-AID
Trade Mark

Plastic Strips with "Super-Stick" now available in Davis D-Cartons and kits when desired with these advantages: (1) a new cushion pad of Red Cross cotton covered with surgical gauze; (2) all four edges of gauze are folded under, free from loose threads, and (3) handy new tab lift, shown at right. Fingers never touch pad.

SAFETY DAVIS DIVISION

DAVIS EMERGENCY EQUIPMENT CO., INC.

64 Halleck St., Newark 4, N. J.

(For details, use Key # D-45 on card on page 85)

dustrial hygiene; well-equipped dispensaries for emergency care as well as periodic medical examinations.

• • •

SAFETY AWARDS emblematic of over two and a half million man-hours without a lost time accident have been presented to the Louisville, Ky. plant of B. F. Goodrich Chemical Company. The plant received the President's Cup which is presented annually to the chemical company's plant compiling the best safety record for the preceding year.

Four other awards were made to the plant by the Louisville Safety Council. A first place plaque was awarded in an inter-plant safety competition including all Louisville companies which employ between 500 and 1000 people. Certificates of merit were presented for completing 1954 with no disabling plant injury and for having no fleet accidents with company vehicles during the year. The Council also tendered an Award of Honor to the plant for having passed the 2½ million man-hour mark with an unblemished safety record.

• • •

FORD MOTOR Company employees made 1954 their safest working year in history, reflecting the effectiveness of intensive efforts, according to John S. Bugas, vice president in charge of industrial relations. The in-plant accident rates dropped last year to record lows of 1.97 for frequency and .28 for severity. Since 1947, Ford has reduced its frequency rate by 81 percent and its severity rate by 65 percent. The company spends millions of dollars annually on safety programs, including more than $5,000,000 to buy protective clothing and equipment for its employees.

• • •

YEAR-END FIGURES show 1954 was one of the safest years in the history of Owens-Illinois Glass Co.

Ten of the firm's 30 plants, warehouses and other installations went through the year with perfect safety records, and the frequency of lost time accidents throughout the company dropped to 2.9 per million man hours from 3.8 in 1953.

• • •

THE EMPLOYEES of the Camden, N. J., plant of Monsanto Chemical Company's Inorganic Chemicals Division have been honored for their all-time company safety record of more than 10 consecutive years without a major injury. A special Executive Committee plaque was presented to the plant, and each employee also received a choice of personal gift awards. The plant is also being awarded a Ten-Year Perfect Safety plaque by its insurance carrier and a certificate of commendation from the National Safety Council.

Powdered Soap

Liquid Soap

EVERY TYPE OF SKIN CLEANSER

Bar Soap

Lightfoot

manufactures all three from raw material to finished product!

A Specialized Soap for Every Type of Plant Requirement!

POWDERED SOAPS

To meet every conceivable industrial need . . . for light, heavy or extra heavy duty, for general plant or office use, or to solve specific cleansing problems.

CHOICE OF BAR SOAPS

- A hard milled soap, extremely economical, especially designed for industrial use.
- An extra mild soap for dry or sensitive skins.
- A hexachlorophene product for those departments requiring this type of soap.

LIQUID SOAP

Furnishes profuse lather; will not irritate or dry the skin. Shipped in non-returnable containers.

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Because Lightfoot manufactures its basic soap from raw material to finished product, you have the assurance of constant, uninterrupted supply of uniform quality, plus a "price right" sales policy.

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Stock warehouses in key cities fill orders immediately upon receipt.

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Lightfoot Advisory Service aids on cleansing problems of all kinds, and has saved substantial sums for many customers.

Your inquiries will receive prompt and intelligent attention

LIGHTFOOT SCHULTZ COMPANY

380 MADISON AVENUE NEW YORK 17, N. Y.

(For details, use Key # D-46 on card on page 85)

transportation safety

LOADING DOCK SHIELD

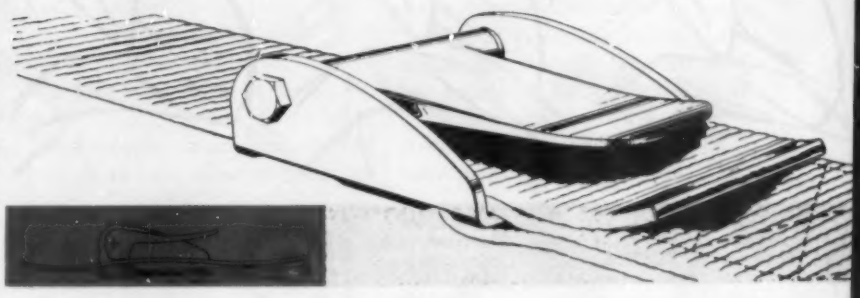
FROMMELT INDUSTRIES have developed a sturdy, metal and canvas, collapsible door hood designed to make any railway or truck loading dock draft free and virtually weatherproof.

The design was originated particularly to help handlers of food perishables to conform with the U. S. Pure Food Regulations pertaining to constant cold temperature maintenance.

Loading dock shields are custom designed to fit standard size rail or truck dock doors regardless of slight dimension variances, and an optional bottom cover is available if full 4-side protection is desired. The shield holds taut when extended

by means of high tension springs and folds flat out of the way, assuring full railroad or truck clearance requirements, when not in use. Loading dock shields are fire, water, and mildew resistant and the material is Underwriters Laboratories Approved.

For detailed information use Key # TS-13 on free inquiry card on page 85.



FOR SAFER MOTORING . . .
FASTEN YOUR SAFETY BELT!

IT HAS BEEN ESTIMATED that one person is killed every 14 minutes in this country's highway slaughterhouse and that another person is injured every 15 seconds! What is being done about it?

Safety authorities and public officials have proposed several long range programs for controlling the mass murder on our highways, such as public education, stricter enforcement, better roads, stiffer penalties, safer vehicles and lighting equipment, etc. All these measures, however, will take time, and it is more than evident that what we need is immediate protection against highway deaths and injuries.

One device that has received increasing attention is the safety belt for passengers, similar to those used in aircraft. Seat belts will not prevent accidents, but there is strong evidence that they can reduce the death and injury toll. Police in Indiana studied 130 fatal highway accidents in which 153 people were killed and 220 vehicles were involved, and attempted to determine in each accident whether a suitable body-restraining device would have given the victims a better chance of surviving the crash. They found that if a restraining device such as a seat belt had been used, 69 percent of those killed would have survived and another 12 percent might have lived. Only 19 percent were listed as hopeless.

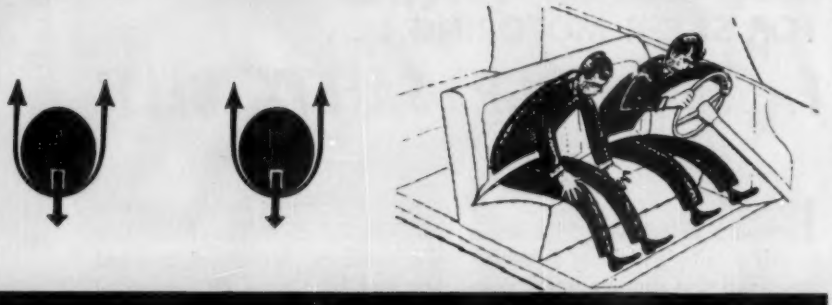
The purpose of the seat belt is to prevent occupants from hurtling forward into the instrument panel or through the windshield or being flung through the doors when the vehicle comes to a crash stop. Engineers at the Cornell Aeronautical Laboratory, Inc., after several years of research, including test crashes with dummies to represent passengers, are in agreement that the seat belt offers a bright ray of hope in the accident picture. Several companies are now manufacturing and marketing seat belts. While the Cornell Aeronautical Laboratory, Inc., a self-sustaining and non-profit affiliate of Cornell University, has recommended the use of seat belts for passenger protection, it has also drawn up a code of minimum requirements for the design, construction and installation of seat belts,

Purpose of seat belts is to prevent automobile's occupants from hurtling forward into windshield or instrument panel or being thrown out door when car comes to crash stop, a serious hazard in any accident or near accident.

Belt too narrow; cuts and hurts.

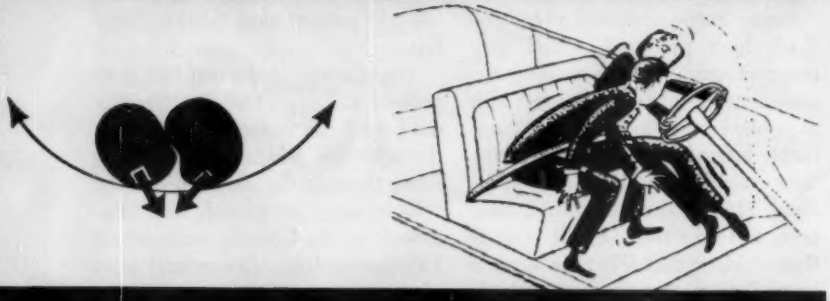
Belt too wide; folds and hurts.

Proper width; spreads the load.



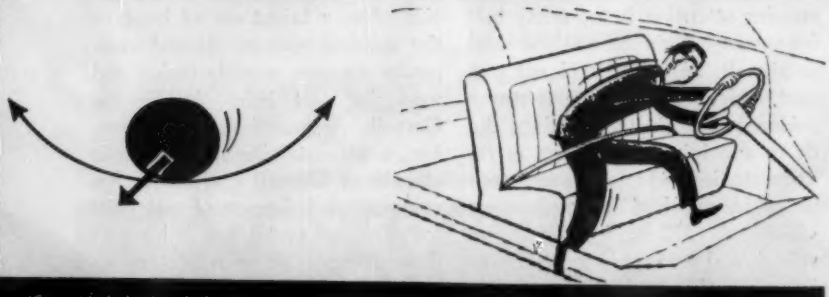
Low stress and good sideward restraint.

Individual belts give best protection.



High stress and poor sideward restraint.

Car-wide belt makes two a "crowd."



Car-wide belt gives little side support.

Possible jolt away from steering wheel.

based on their research into vehicle crashes.

It is not the intention of the Laboratory to test, approve or endorse the seat belts made by any company. Rather, the code is designed as an aid to the manufacturers and the public so that certain standards can be met to make the seat belt an effective means of protection. The following recommendations are from the Laboratory findings.

The Webbing

The belt itself should not be too weak, too wide, too narrow, or too slippery. The tensile breaking strength should be at least 1500 pounds. To assure this strength even after the belt has been used for a period of time, an initial or new tensile strength of 2250 pounds is suggested.

The web fabric should be tough enough to resist normal wear and deterioration. Although not the strongest of known fibers, a tight weave cotton webbing of about ⅛ inch thickness has been found satisfactory and the relative coarseness of the belt offers good slip resistance to fittings.

The belt should be wide enough to distribute the pressure and not cut into the body, but also narrow enough so that the edges do not fold over. Belts about 2 inches wide are about right, while 4-inch widths are too wide.

The Buckle

The belt and buckle must work together in harmony. The belt is of no value if the buckle gives way or permits the webbing to slip when less than 1500 pounds of tensile load are applied. That is why the webbing must not be too slippery, and also why the buckle must be designed to hold without slipping. Yet the buckle should be designed for quick, easy threading. Complicated buckles that can be threaded in several ways or require considerable time will only discourage drivers and passengers from using the belts. The

types of buckles used on most airplane belts today are excellent for autos. They are simple, sturdy and foolproof; tension on the belt closes the buckle more tightly. The webbing of aircraft belts, however, is not necessarily suitable for ground vehicles.

Another requisite of a good buckle is that it be easy to release. In many vehicle accidents it may be necessary for the occupants to escape as quickly as possible from overturned vehicles. For example, the wearer, hanging upside down in the vehicle, should be able to release the buckle easily with one hand. Some buckles have been found to lock after being subjected to pressure loads, making it impossible to release them manually. Others require the pressure load to be removed before they can be released.

How Many Belts?

There should be a seat belt for each occupant of the vehicle. If two or three persons are held by a single belt across their laps, they are likely to be jolted against each other in a crash. Or if one person is using a car-wide belt, he can be thrown sideways in an accident.

Any fittings or "hardware" on the belt must also meet the minimum strength requirements of 1500 pounds tensile load. Stitching to attach fittings has proved to be a potential weak spot in the overall strength of many belts. Stitches must be properly patterned and made with a strong thread such as nylon. A recommended pattern has the stitching zig-zag across the webbing diagonally. Cementing of mating webbing surfaces prior to stitching will greatly increase the strength at any joint, making the stitching much less critical.

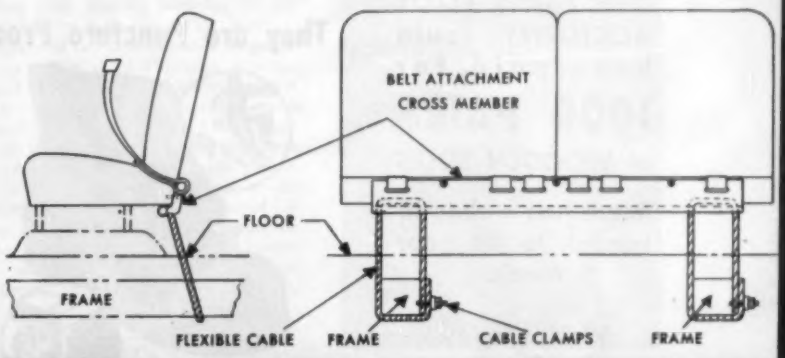
The Installation

A seat belt may meet all the strength requirements but be so poorly installed that the belt is of little value. A belt's anchorage must meet the strength requirement of holding a 3000 pound loop load. There are several satisfactory methods of attaching the belts to the car, but ultimately the load must be taken to the strongest anchorage possible, the frame of the vehicle. When installed, the belt should be at an angle over the lap of 30 to 60 degrees from the floor and should not restrict normal seat adjustment.

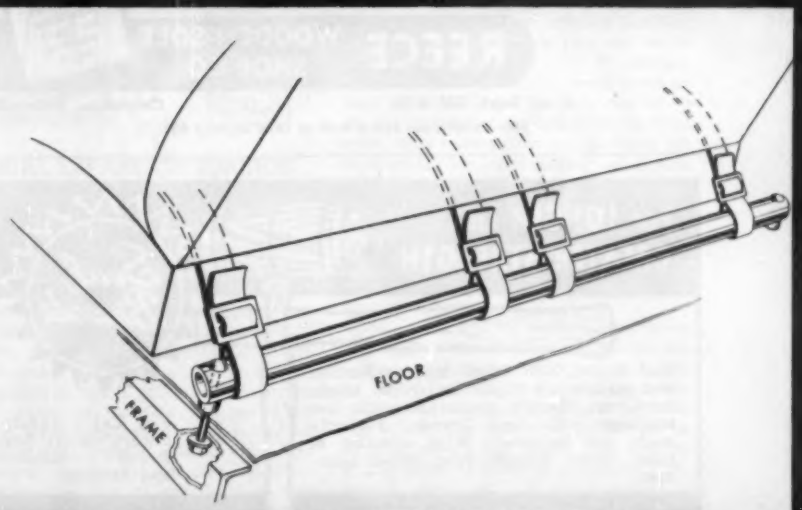
Direct to Frame

Where practical, attachments should be made directly to the frame of the vehicle. In any case, the full load of all belts simultaneously applied should be carried eventually to the frame of the car without causing permanent deformation of any intermediate load carrying member. Several seat belt kits call for attachment to the vehicle floor. However, floors are of thin sheet steel and corrosion on the underside can be rapid, especially in northern states where calcium chloride is used. Large washers or other reinforcements are sometimes used to prevent pulling of the attachment through the thin steel, but even with these there is likely to be floor deformation in a crash. A bar or steel cables may be used as intermediate connectors, but their

With seat belts for each occupant of a vehicle, with wide enough webbing, with a safe, yet easily unfastenable buckle, and careful attachment of belts to the car frame, many lives can be saved from the auto death toll.



One type of seat belt installation takes the "pull" eventually to the car frame.



Another method of connecting the belts to the frame. The bar must be strong.

ultimate anchorage to the vehicle frame is recommended.

Seat belts should NEVER be secured just to the seat. Most seats are not strongly attached to the floor and tear loose even in minor crashes. With the seat belt attached only to the seat, both the seat and occupant may be hurled from the vehicle and with the added weight of the seat, the resulting blows to the human body may be more severe than if no seat belt were used.

How Strong the Installation?

Finally, there is the question of how strong the whole installation should be. At first thought, it would appear that the stronger the belt installation the better and safer it should be. However, there are practical limits to the strength needed. When vehicle crashes reach a certain severity, the car structure will collapse and there is obviously little practical value in having seat belts that can withstand the forces that would be encountered in such crashes. The requirements of the Cornell Aeronautical Laboratory, Inc. have been set up on the basis that the seat belt should hold a 200-pound man in position by a belt loop force of 3000 pounds. The Laboratory has set up testing procedures for the benefit of engineers and manufacturers in testing their own products. The seat belt buyer would do well, according to the Laboratory, to demand that his seat belt salesman produce evidence that the requirements as set forth have been met.

Pictures by courtesy of Cornell Aeronautical Laboratory, Inc.

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They Insulate

They are Puncture Proof

One costly FOOT ACCIDENT could have paid for

1000 PAIRS of WOODEN SOLES

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REECE WOODEN SOLE SHOE CO.

Dept. SM 4-55 Columbus, Nebraska

(For details, use Key # D-48 on card on page 85)

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Seal Brand, kiln dried, hickory handles and mallets are made for rough, tough, hard use. There's greater strength, less breakage with Seal Brands. Perfectly made and balanced. Wide selection of sizes. Order through your jobber salesman.

For Extra Safety always specify Seal Brand . . . Handles and Mallets.

LA PIERRE-SAWYER HANDLE COMPANY

Jackson, Missouri

(For details, use Key # D-49 on card on page 85)

Ice, Fire, and Smoke

(Continued from page 68)

taminated or oxygen-deficient atmospheres. Experience with the first piece of apparatus substantiated this and more were ordered. Chief Wells was also pleased to note that the all important factor of maintenance was practically solved in this mask. Used canisters are discarded and new ones inserted, if necessary right at the scene . . . in a matter of seconds.

With the new equipment on hand, the department's men underwent a series of classes on masks, beginning with the proper method of putting on a mask or taking it off, the care a mask must have to be dependable "when the chips are down," the handling of fire-fighting equipment while wearing masks, etc. But this was just the start; the Fargo fire-fighters spent many hours in practice with masks too, under carefully simulated fire conditions, in the gas chamber and at training blazes.

When the test came . . . in the form of an actual fire . . . the men were ready, and so was their equipment . . . to overcome smoke and ice . . . as well as fire.

Pictures by courtesy of Mine Safety Appliances Company.

Material appearing in this section is published as information for our readers and is not intended to imply endorsement or guarantee by SAFETY MAINTENANCE.

What's New . . .

For your convenience in obtaining descriptive literature of products listed here, use the Reader's Inquiry Card. Just write in the code number given with each item. Or send written requests to:

Service Dept.,
SAFETY MAINTENANCE & PRODUCTION

CLEAR ALKYD VARNISH

(Use Key # 853 on Inquiry Card on page 85)

AN EXTRA PALE clear alkyd resin varnish that may be used on wood, metal, and linoleum, for either interior or exterior surfaces, has been developed by the paint division of the Pittsburgh Plate Glass Co. Resistant to scrubbing and abrasion, the new varnish dries in 2½ to 3 hours and surfaces coated with it can be put into service after 12 hours.

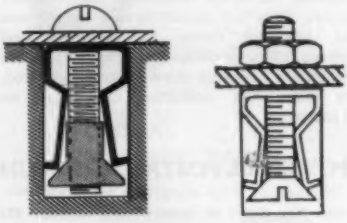
To be known as Waterspar Varnish Extra Pale Clear, the new product's particular advantage is for use where a minimum of discoloring is desirable, either new or after aging. As a linoleum or linowall coating it offers protection without discoloring delicate patterns. The new product is said to be free-flowing and easily applied by brush. It may also be used as a sealer on plywood, knotty pine paneling and other wood surfaces by thinning with mineral spirits.

OVERLOAD SAFETY SWITCH

(Use Key # 854 on Inquiry Card on page 85)

PURPOSE OF the new Dyna-Switch, made by W. C. Dillon & Co., Inc., is to prevent overload damage to costly hoisting equipment by automatically cutting out lifting power whenever the safety maximum is exceeded. This is done by means of a massive U-shaped bar of high grade tool steel, heat treated to flex millions of cycles without losing its resiliency. Attached between the load and the hoist, it trips a sensitive micro-switch whenever the bar is deflected beyond its pre-set operating point, thereby breaking the lifting circuit.

Accuracy of the new 20,000-lb. capacity model is within ½ of 1%, with a safety factor of 3½ to 1. This safety factor is managed by a free-riding stop bolt at the open end of the U-shaped bar. This bolt restrains the bar against deflecting more than 21,000 lbs. even though much greater loads are imposed. Lifting eyes of the Dyna-Switch are electrically welded in position. Dimensions of this compact instrument are only 18¼" long x 6¼" wide x 2⅛" deep and with a net weight of 20½ pounds. For 110 or 220/440 volt power supply.



DUAL EXPANSION ANCHOR

(Use Key # 855 on Inquiry Card on page 85)

THE WYEM DUAL Expansion Anchors can be used with concrete, brick, hollow tile, cinder block, marble, plastics, glass, wood, metal and similar materials. They are used in industrial, commercial and domestic fields by electricians, plumbers, millwrights, repairmen, etc. The anchors are simple to install, and require no setting tool. They are rustproof and resist corrosion, have excellent gripping power because of their design and construction, and withstand sudden shock and vibration. They can be used at any depth of hole and made to hold at any point, even where the hole is drilled too deep or too wide. Available in all sizes to fit standard machine screws, they will not distort and can be used over again.

OVERHEAD MAINTENANCE LIFT

(Use Key # 856 on Inquiry Card on page 85)

DESIGNED FOR fast, efficient handling of overhead maintenance jobs, the Model 19-6 "Lift-A-Loft" (with a 19' 6" platform height) permits one man to reach points as high as 25 feet over the floor and up to 16 feet in front of the unit. The operator rides this battery-powered platform lift truck to the job location, then using push buttons, quickly raises the platform to the lights, piping, girders or other overhead maintenance problems. Up to 500 lb. loads are safety carried on the platform, permitting replacement parts, cleaning materials and other equipment to be carried aloft with the operator.

Use of the unit for washing and group replacement of overhead lights permits continued production work at machines. In some factories, the regular vacuum cleaning of overhead structures with the "Lift-A-Loft" has helped to reduce fire insurance rates. The model 19-6 has an overall height in traveling position of 7' 3"; overall width 35". A day's supply of washing water is carried in the ballast tank and can be pumped to washing tanks on the platform to make the unit completely self-sufficient. Available from Mitchell Maintenance Co., Inc.

AIR-SUPPLIED MASK

(Use Key # 857 on Inquiry Card on page 85)

A NEWLY-DESIGNED mask which supplies fire fighters and industrial workers with oxygen or air, as desired, has been announced by Mine Safety Appliances Co. The MSA Mask is available in two models, the Air-Mask and the O_2-Mask. Either combines a supply of air or oxygen with a demand regulator to provide 30 minutes service in highly toxic or oxygen-deficient atmospheres.

A backmounted cylinder, supported by a lightweight metal frame, is held by nylon harness to the wearer's body. The entire mask weighs only 30 pounds. The new mask can be put in operation in only a few moments. After donning the mask, the wearer simply opens the cylinder valve, adjusts the facepiece, and breathes normally.

SAFETY FLOOR WAX

(Use Key # 858 on Inquiry Card on page 85)

A NEW SAFETY floor wax containing "Ludox" colloidal silica, which standard testing methods indicate is a highly effective slip-retardant substance, is being introduced by Du Pont.

According to the manufacturer, the anti-slip ingredient, developed in Du Pont laboratories, has for several years been used by floor wax manufacturers as the safety factor in industrial and institutional waxes. Entry of "Ludox" fortified waxes into the consumer field has been delayed by the cost of the material. However, a recent Du Pont survey which revealed that 68 per cent of the people interviewed would be willing to pay a higher price for a good, skid-resistant wax prompted that Company to trial market it in 5 metropolitan areas.

It is said that colloidal silica not only adds safer footing, but also hardens the wax film. Some slip-retardant materials softened or produced tacky films. The extremely small particles of colloidal silica—each about one two-millionths of an inch in diameter—surround the much larger wax particles. As the foot presses on the wax floor, the hard particles are pushed into the softer wax. Energy is absorbed at the point of impact, creating a snubbing action. The Du Pont self-polishing wax is said to be water repellent and suitable for linoleum, asphalt tile, rubber tile, vinyl tile, wood, etc.

FLAME-RESISTANT SOUND-REFLECTING SCREEN

(Use Key # 859 on Inquiry Card on page 85)

A NEW PRODUCT called TransWall, a lightweight, retractable sound barrier curtain, designed especially for industrial applications, is announced by Bemis Bro. Bag Co. The screen is made of a flame-resistive and sound-reflecting material known as "Bemisorb," a specially treated and coated burlap, developed to reduce critical factory noise level at its source. Designed and engineered for individual applications, TransWalls can be installed anywhere in a factory to isolate machine and production noise, and in areas that are potential fire hazards or otherwise dangerous to employees, such as welding operations.

The curtains consist of 7-inch panel folds, chain-spaced to prevent complete extension, and supported by steel top plates that operate on nylon wheels in an enclosed track. They are available in several tones of decorator colors for factories and offices. The curtain is easily adjustable when the need for more space is required, or when one production area must be changed.

POWERFUL PORTABLE VACUUM

(Use Key # 860 on Inquiry Card on page 85)

A POWERFUL, low-priced, wet-dry industrial vacuum cleaner, the E-200 has just been announced by Multi-Clean Products, Inc. It can be used for such heavy volume jobs as cleaning out elevator pits, freight cars and bulk storage areas, or for ordinary building maintenance or for cleaning delicate switchboard wiring systems.

The unit features a maximum 45-inch water lift and 18-gauge steel tank with a capacity of 10-gallons wet or 1¼ bushels dry. It is said to be ideal for all jobs from the heaviest volume wet-or-dry pickups to the lightest vacuuming or blowing. The manufacturer points out that it will pick up water, cleaning solutions, liquid spillage, dirt, lint, scraps of foreign material. And it will spray paints and insecticides or blow dirt and dust out of inaccessible places such as motors, machines, stock bins, etc.

The E-200 is equipped with a Universal type AC-DC, 115 volt, 600 watt motor, a long-life precision ball bearing power unit permanently sealed, and 30-foot, 18 gauge 3 conductor cable with built-in strain reliever. A full range of attachments is available, including special tools for cleaning walls, ceilings, overhead pipes and other hard-to-reach areas.

HEAT RESISTANT HOOD

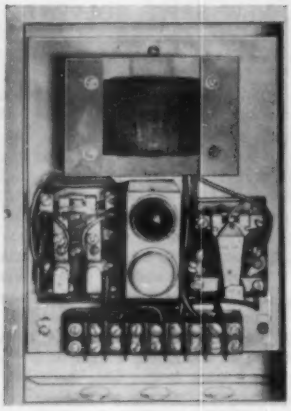
(Use Key # 861 on Inquiry Card on page 85)

A NEW lightweight protective hood made of "Fyre-Armor," the aluminized flame and heat resistant fabric, has just been introduced as the latest firefighter's weapon against radiant heat temperatures as high as 2500° F.

The hood features high-heat resistant eyeglasses, complete freedom of movement and certified protection against radiant heat.

Spacious enough to permit the wearing of standard breathing equipment or a smoke mask, the hood, which covers the head, chest, shoulders and back, is constructed to be worn over a standard hard hat.

"Fyre-Armor" is the recently developed heat and flame resistant fabric made with various metallic layers and an outside coating of aluminum foil. It is also available in firefighting suits, rescue blankets, industrial aprons, mittens, leggings and boots.



ELEVATOR SAFETY DEVICE

(Use Key # 862 on Inquiry Card on page 85)

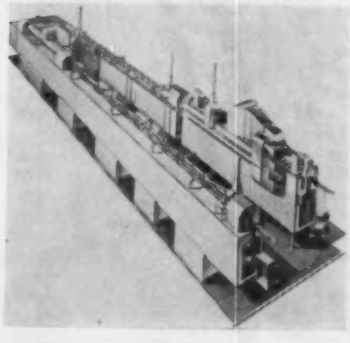
TO PREVENT elevator overloading, this equipment, which is easily mounted on the elevator cab, signals when predetermined load is reached and, when cab is overloaded, it electronically prevents movement of the elevator and automatically resets when overload is removed. It has been field tested for many months, and is equally effective on new or existing passenger or freight elevators. Manufactured by Thompson Elevator & Electric Co., it is available as a packaged unit with all material furnished for the average installation.

ENCLOSED PICKLING MACHINE

(Use Key # 863 on Inquiry Card on page 85)

THE HYDRO-HERMETIC Seal which protects the conveyor against corrosive fumes on the spray cleaning and pickling machines of the R. C. Mahon Co. seals the top of the machine throughout its entire length. Parts are carried through the machine on an overhead conveyor equipped with special corrosion-resistant adapters. The seal prevents the escape of active chemical fumes and reduces the requirements for elaborate ventilating systems usually required in pickling operations.

The tanks and tunnel are of mild steel, lined with lead or rubber or employing monel metal where corrosive materials or fumes are present. The machines permit efficient and thorough preparation of parts for later processing.



FIRE HOSE PROTECTOR

(Use Key # 864 on Inquiry Card on page 85)

A NEW mildew-resisting, waterproofing material, developed by The B. F. Goodrich Company Industrial Products Division and applied to fire hose jackets, resists moisture absorption and mildew attack. Hose treated with "Superseal" will also help fire fighters in below-freezing temperatures. The water-repellant action maintains hose flexibility in weather conditions that freezes the covers of conventional hose. Improved water repellancy also means a significant reduction in weight at any temperature, since long lengths of water soaked hose are hard to handle.

The Superseal treatment is available in all sizes of fire hose used by municipal fire departments, in industry, institutions, forestry and military use. Covers so treated are light brown in color and have a drier "feel" than some gummy water-repellant agents. The improved treatment will be offered at no increase in cost over standard charges for treated hose.

BACTERIAL CLEANER FOR SEPTIC TANKS

(Use Key # 865 on Inquiry Card on page 85)

A NEW BACTERIAL development for sluggish septic tanks and cesspools has been announced by The FX-Lab Company. The new product, Formula FX-11, employs heavy concentrations of micro-organisms in liquid form, designed to digest and break through the sludge barriers that are obstructing the toilet flow of organic waste to disposal systems.

A sluggish system can be restored if the product is used at the first sign of backup, bubble, or slow drain off. The accelerated bacterial action clears pipes, baffles and cesspool sidewalls, and gradually liquefies undigested particles that are clogging the drainfield soil pores. Formula FX-11 contains no harmful chemical ingredients, and is said to be safe to handle, non-corrosive and not harmful to the pipes, construction of the septic tank or cesspool, or the necessary bacteria within. One quart is used for each 500 gallons capacity. It is poured into the toilet bowl and flushed.

EXTINGUISHER SERVICING DEVICE

(Use Key # 866 on Inquiry Card on page 85)

A NEW FIRE extinguisher servicing device for removing extinguisher heads safely and quickly, has been introduced by the Central Safety Equipment Co. The product, named the "Extinguisher Servicing Device," has been designed for use by industrial and commercial firms maintaining extinguishers and extinguisher servicing organizations. It enables one man to remove an extinguisher head easily.

The device consists of a stainless steel impact wrench and adjustable aluminum gripper base. To remove the "head," the extinguisher is placed on the gripper base and locked into position by a foot controlled "brake," adjustable for 1½ and 2½ gallon extinguishers. The impact wrench is then applied. Through a loose, swinging action in the handle, impact for jarring loose the head is achieved, without damage to the extinguisher, head-threads or operator.

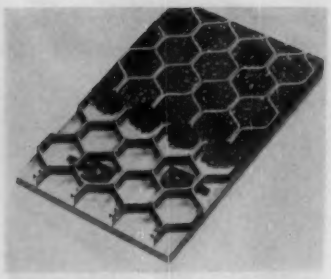
WATERPROOF MASONRY PAINT

(Use Key # 867 on Inquiry Card on page 85)

THE PROBLEM of a wet basement, leaking silo or seeping elevator pit can be controlled with Waterfoil, a new ready-mixed cement-base paint designed to prevent water seepage. The paint, produced by the A. C. Horn Division of Sun Chemical Corp., can be applied to a wet or dry wall without the need to saturate the surface with water before and after application.

The addition of a complex combination of self-hydrating agents known as KB-55 renders Waterfoil self-curing. Through chemical interaction, the coating cures into a stone-like water barrier which permits breathing of the underlying masonry but does not allow the passage of water. It is claimed that it can withstand hydrostatic pressure of 500 lbs. per square foot. It can be applied with an ordinary white wash brush and dries within eight to ten hours.

The product is non-toxic, and is available in five colors: white, gray, green, rose and buff. Available in one-gallon cans and also in four-gallon cans, the latter including a kit containing a free applicator brush and a sample of "Plug and Seal," a hydraulic cement for filling up holes in basement walls.



STEEL FLOOR ARMOR

(Use Key # 868 on Inquiry Card on page 85)

ANNOUNCEMENT OF a "New Hexteel" safety floor armor that has less weight per square foot and a greater exposed steel surface has been made by the Klemp Metal Grating Corp. Designed as a heavy-duty floor to withstand abnormal wear and rough usage, the new ⅜" x 16 gage (.065) hexagonal steel grating has a weight of 1.7 pounds per square foot. The grating, filled with a hot or cold mastic, is ideal for resurfacing ramps, garages, factory aisles, parking areas, runways, loading docks, depots, traffic surfaces, institutions, meat packing and food processing plants, chemical plants and wherever rough usage decreases the lasting durability of the surface area or flooring.

It can also be used as a steel armor in new concrete floor installation, or in conjunction with a mastic fill on existing concrete or wood floors.

Hexteel forms a continuous steel floor armor which eliminates cracking, swelling, warping and shrinking. These armored floors are said to be impervious to wheels of any size and are designed to take the brunt of rolling loads. The panels are easily installed. Sides and ends are easily locked together on the job site to form a continuous grating. One quick method of anchoring the floor armor is by means of powder-actuated tools.

SMALL STEAM CLEANER

(Use Key # 869 on Inquiry Card on page 85)

A NEW, SMALL steam cleaner is now available from Malsbary Mfg. Co. The baby Model 60 is capable of handling the cleaning work of most small garages and service stations, restaurants, bakeries, candy shops, supermarkets, meat markets, small slaughterhouses, small factories, canneries, kennels, and veterinarians. It is powerful enough to cut and wash away grease and dirt, sterilize, disinfect, deodorize, and to melt snow and ice.

The unit works directly off regular water main where water pressure is 60 pounds or greater, reaches working temperatures in two to three minutes, delivers 60 gallons of hot solution (325° F. inside coils) hourly at 50 p.s.i. and up. The operator controls operation at the nozzle. When valve at cleaning nozzle is shut, the burner automatically shuts off; comes on again the instant nozzle-control valve is opened. A safety vacuum breaker on incoming water line prevents solution from backing up into fresh water supply. If water line is accidentally broken or water flow cut off, burner automatically shuts off, thus preventing coils from burning out.

Malsbary Model 60 is 17" wide, 26½" long and 52" high, and uses liquid detergent, which feeds direct from detergent tank to water entering the heating coils. Strength of the cleaning solution is determined by setting a solution metering valve. For areas where water main pressure is below 60 pounds, a booster pump assembly is available.

AUTOMATIC EMERGENCY LIGHT

(Use Key # 870 on Inquiry Card on page 85)

THE COMPLETELY new Sentry-Lite is designed to provide instant automatic emergency light over large areas, if power is interrupted for any reason. Panic, injury to personnel, possible sabotage, spoilage of goods in process, costly work stoppage can be prevented before they occur.

The unit features an automatic recharger operating on standard electrical power to keep battery up to peak capacity at all times. The test panel on the front includes a momentary switch for test as to function, an A. C. fuse, a toggle switch to cut off light to conserve power in extended power failure, and a pilot indicator light indicating unit is functioning.

The total weight is 50 lbs., including battery, which provides more than 12 hours of continuous operation. Unit is topped by two 5000 candle power sealed beam lamps. More lamps may be added and choice of flood or spot lights is available. Made by Hobby & Brown Electronic Corp.

NEW SAFER SOLVENT

(Use Key # 871 on Inquiry Card on page 85)

A SOLVENT that is said to be non-flammable and ten times less toxic than carbon tetrachloride is announced by Flamort Chemical Co. The manufacturer states that the solvent properties of X-Sol, which contains inhibited 1,1,1-Trichloroethane, closely parallel those of carbon tet.

The solvent can be used for removing wax, grease, oil and tars. For metal cleaning, it is especially suitable for cold cleaning, dip-cleaning and bucket-cleaning operations, but is not recommended for vapor degreasing. It does not corrode aluminum or aluminum alloys under ordinary conditions. It can also be used for cold-process dry cleaning of fabrics.

PORTABLE LADDER STAND

(Use Key # 872 on Inquiry Card on page 85)

A NEW MOBILE ladder-truck, specially designed to help cut costs in the maintenance zone between 7 and 14 feet, is now available. New features are said to save maintenance personnel time and allow them to work more efficiently and safely. With an overall height of 78", length of 42" and width of 26", the Safe-Lad mobile ladder-truck is easily rolled to the job—on standard elevators or through regular doorways. The sturdy base tray provides storage space for necessary tools or supplies.

As operator places his foot on first step the two swivel casters (other two are fixed) are automatically retracted, allowing front end to rest solidly on two rubber-tipped steel legs. After job is finished, a reset lever places the ladder back on all four wheels. A lightweight metal auxiliary platform may be bolted to top step to increase platform height to 84". An adjustable height guard rail surrounds the platform area on three sides. A sliding tray on guard rail provides a handy work space.

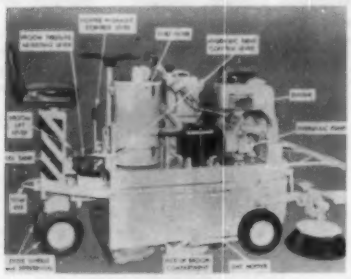
The Safe-Lad is fabricated with steel and strongly arc welded. Steps are diamond tread plate steel. In addition to the standard model, a special "overhang" model has a counterbalanced platform extending 24", thus enabling maintenance work directly over counters or shelving.

UNIVERSAL SAFETY HAT

(Use Key # 873 on Inquiry Card on page 85)

WELSH-GUARD Plastiglass Safety Hat provides protection, style and comfort. Particularly effective in guarding against falling objects, electrical shock and dripping fluids. Has strength to exceed impact of 40 foot lbs. Gives insulation protection against shock through high dielectric properties. Resilient material is moisture proof and will not crack or break. Reduces inventory problem by universal cradle, which adapts one hat to all sizes. Cradle suspension of crown provides maximum shock absorption. Space between cradle and crown gives air-conditioned comfort.

Hat available in brown; other colors on special request. Style 1150 has broad brim around entire hat. Style 1155 is modified with brim only in front. Web chin strap, winter liners, and extra leatherette cradles are available from Welsh Mfg. Co.



MOTORIZED SWEEPER

(Use Key # 874 on Inquiry Card on page 85)

A HEAVY-DUTY truck-mounted industrial sweeper suitable for both inside and yard operations is announced by the Industrial Sweeper Co. Called the "Hydra-Sweep," the unit has the driver's seat located high at the back for full visibility and control. It is driven by hydraulic power at the dual rear wheels. Hand levers adjust the full-floating pick-up brush and also the two side-front brushes. The latter brushes permit sweeping close to walls, columns, etc. The dirt hopper is also power operated and rear wheel steering allows sharp turns.

Although higher speeds are possible, the unit can travel at a speed of up to 6 M.P.H., permitting coverage of 150,000 square feet in an hour. The broom speed remains constant, regardless of travel speed. The sweeping width can be adjusted from 30 to 61 inches. Overall dimensions are 89 inches long, 56 high and 40 wide. The unit can be used for towing shop trucks as well as sweeping.

NEW TRAFFICONE FLASHER

(Use Key # 875 on Inquiry Card on page 85)

TO MAKE the Trafficone System as efficient at night as in daylight, its manufacturer, the Davis Emergency Equipment Co., Inc., has developed a special flasher light to fit any size Trafficone. The flasher can be bought separately, for installation on present units, or it is available already attached to a Trafficone.

Clearly visible, even beyond the reach of car headlights, the flashing red or amber light will run continuously for two days, or intermittently up to a full week. It operates from a standard six volt battery. It is completely weatherproof, and is built to operate in rain and snow storms.

COMFORT STANDING MAT

(Use Key # 876 on Inquiry Card on page 85)

THE AMERICAN Floor Products Co. now offers a new industrial and commercial floor matting designed to reduce employee fatigue and injury. The product is called Neo-Sponge comfort mat and is made through a special patented process of blowing millions of inert nitrogen bubbles into Dupont's Neoprene.

Its outstanding properties are: permanent resilience, high electrical resistance (61,000 volts before puncture), and an almost impervious resistance to acid, oil, grease and heat. The mat is said to outwear similar products made of rubber. It is especially suited to any type of business where employees stand at their jobs. The molded tread design on both sides makes it reversible and offers excellent non-slip foot traction. Available in two thicknesses, ¼" and ⅜", and in standard sizes up to 36" wide x 10' long. Larger sizes can be supplied upon request.

STAIR-CLIMBING TRUCK

(Use Key # 877 on Inquiry Card on page 85)

A NEW LINE of hand trucks, equipped with non-mar and easier operating stair glides, has been announced by Nutting Truck and Caster Co. Their glide assemblies are equipped with rubberized fabric V-belts which cannot damage in any manner stairs having finished surfaces. For less effort going up or down, the glide assemblies are positioned to permit a smooth movement parallel to slope of curbs or stairs, rather than the intermittent raising and lowering of the load as with conventional glides.

These two-wheeled trucks handle cases, crates, cartons, kegs, bags, drums and

barrels. Of electrically welded tubular steel with choice of single or double handles, and open or solid plate noses in 5", 7" or 9" lengths. Frame size—14" x 47" high with choice of 6" or 10" roller bearing, semi-pneumatic rubber tired wheels for both outdoor and indoor use.

ODORLESS SOLVENT

(Use Key # 878 on Inquiry Card on page 85)

A NEW, odorless solvent was developed recently by The Penetone Company. Known as TPC SOLVENT, it is intended as an odorless replacement for solvents such as kerosene and mineral spirits which give off odors and fumes that are obnoxious to many people. The solvent has a high flashpoint of 130 F., which compares favorably with the 105 F. of mineral spirits. It has a maximum allowable concentration of 1000 ppm. so that the toxicity problem is practically non-existent. It was not designed as a replacement for carbon tetrachloride and should not be confused with the so-called "safety solvents."

The most important uses for TPC SOLVENT are as a tank degreaser and for manual cleaning on work bench or production lines. In these applications, it is used at room temperatures for removal of greases, oils, asphalt, etc. It may be used safely on all metals and insulation equipment. It leaves no residue.

COATED TERRY GLOVES

(Use Key # 879 on Inquiry Card on page 85)

AS A GENERAL heavy-duty work glove, the Keller Glove Mfg. Co. is marketing a terry-cloth fabric glove coated with plastic. The resulting rough surface provides a good grip in handing oily or wet materials. The plastic coating also resists cutting and abrasion from sharp or rough objects for long wear. The loop construction of the fabric provides cushioning comfort for the wearer and insulates the hand while protecting it.

LIGHTWEIGHT PAINT MASK

(Use Key # 880 on Inquiry Card on page 85)

THE NEW "Flex-A-Prene" Paint Mask, recently developed by Flexo Products, Inc., provides convenient low cost protection for spray paint operators. It keeps out paint pigments and solvents with amazing efficiency, according to the makers, and is extremely comfortable to wear, and easy to talk and breathe through. The new Paint Mask weighs only one ounce and can be worn with goggles or spectacles.

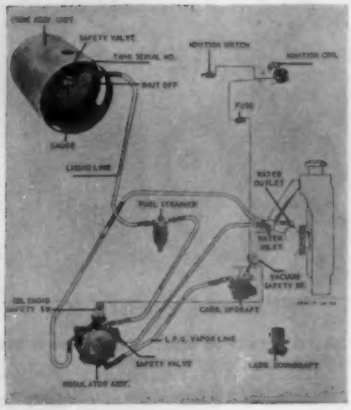
An entirely new filter material, "Prenex," is utilized. "Prenex" is not affected by paint pigments or solvents and won't clog, soften, swell or jell . . . even after hundreds of hours of exposure. This filter is said to last much longer than conventional paint mask filters and cuts down on costly lost production hours because less frequent filter replacements are required. The mask is a safety device which workers will willingly wear because of its comfortable, lightweight construction.

WORK BENCH TRUCKS

(Use Key # 881 on Inquiry Card on page 85)

USE OF elevated platform trucks as "work benches" saves time, labor and employee fatigue, according to the manufacturer, Nutting Truck & Caster Co. Parts and fabricated structures requiring drilling, punching and similar operations are kept mobile and at comfortable, "work height" level.

Elevated platform trucks can be furnished in any required height and size for mounting drills, saws, shears, grinders and other bench-size machine tools. Running gears consist of 4 ball bearing swivel casters for easy mobility in any direction or of 2 casters on one end with axle mounted main wheels opposite; choice of wheels include Roller Bearing, Demountable Rubber Tired or Semi-Steel in wide range of sizes.



LP-GAS CONVERSION KITS FOR FORK TRUCKS

(Use Key # 882 on Inquiry Card on page 85)

CLARK Equipment Company has announced that users of gas-powered Clark fork trucks can now have their machines adapted to liquefied petroleum gas power through installation of a conversion kit recently made available to its dealers. The kits include the same components used in LP-Gas production models built at Clark's factory with Underwriters Laboratories approval. Items furnished with the kit are individually UL-approved. Conversions can now be made on Clark's standard Clipper, Carloader, Yardlift 40 and Utilitruc model fork trucks. Kits for other models will be available soon.

What's YOUR Problem?

- **Has an accident or fire interrupted production?**
- **Want to know how to prevent it?**
- **Do you need background information on equipment for industrial safety, hygiene, or maintenance?**

As a service to its readers, "Safety Maintenance" will arrange to supply manufacturers literature on the following subjects. Just insert the key number on the Readers Inquiry Card on the opposite page and be sure to fill in your name and address. If you need information on a specific type of product, simply write it on the Inquiry Card.

Key Number	Subject
101	Safety Goggles
102	Face Shields
103	Lens Cleaning & Anti Fogging Equipment
104	Sweatbands
105	Hard Hats
106	Respirators & Masks
107	Protective Clothing
108	Women's Protective Clothing
109	Safety Belts
110	Safety Gloves
111	Safety Toe Shoes
112	Safety Boots
113	Wooden Sole Shoes
114	Anti-Slip Soles
115	Oil-Proof Soles
116	Welding Helmets
117	Welding Curtains
118	Protective Skin Creams
119	Skin Cleansers & Soaps
121	Sanitary Drinking Cups
122	Athlete's Foot Control
123	Salt Tablets
124	Noise Control
125	Antiseptic Medication
126	Burn Medication
127	First Aid Kits & Supplies
128	Stretchers & Litters
129	Resuscitators

Key Number	Subject
130	Portable Ventilators
131	Dust & Fume Collectors
132	Carbon Monoxide Control
133	Fire Extinguishers
134	Safety Cans
134A	Extinguishing Ash Trays
136	Alarms & Warning Lights
137	Safer Solvents
138	Flammable Liquid Pumps
139	Explosion-Proof Lights
140	Electrical Insulation Testers
141	Anti-Slip Flooring & Steps
142	Anti-Slip Waxes & Finishes
143	Floor Cleaning Products
144	Floor Machine Equipment
145	Oil & Grease Absorbents
146	Paints
147	Ladders & Safety Devices
148	Scaffolds
149	Work Platforms
150	Fluorescent Lamp Guards
151	Machine Guards
152	Power Press Feeders
153	Safety Signs
154	Aisle Marking Equipment
155	Safety Awards & Emblems
156	Employee Safety Guide
157	Hand Tools

VERSATILE VALVE

(Use Key # 883 on Inquiry Card on page 85)

THE NEW stainless steel Graloc vent-drain-bleeder valve, in sizes ⅛" and ¾", has been designed for 20,000 psi safe working pressure or temperatures up to 1200°F. A pressure-aided seat makes it leakproof for oil, water, gas or steam service. It is fabricated from a combination of types 410 and 416 stainless steel, making it suitable for essentially any fluid or atmosphere, and providing a maximum resistance to galling.

It may be used for vents and drains at the high and low points of piping, equipment and instruments, to bleed at double block valves, and as freeze drains, trycocks and sample connections. With its universal application, it provides a means of reducing maintenance stocks.

FREE BULLETINS & CATALOGS

As a convenience to executives, these new publications of manufacturers are offered by the Reader Service Department of SAFETY MAINTENANCE & PRODUCTION. To obtain copies write in the key numbers on the free-postage card below.

MISCELLANEOUS

Wire Rope Assemblies 246
Macwhyte Co. This 24-page catalog describes, illustrates, and gives full specifications on a wide variety of wire rope fittings to be used for slings and hoists and as parts of machinery or equipment. Included are eyes, ring eyes, studs, sleeves, hooks, forks and wire rope.

Materials Handling Problems ... 247
Towmotor Corp. A magazine type of bulletin offers documentary photo-stories that outline materials handling problem in various types of industries and show how they were solved.

Engine Safety Crank 248
Safety Crank Co. Illustrated 4-page bulletin describes a manual crank that is designed to eliminate accidents in cranking any type of internal combustion engine.

Arc Welding Methods 249
Hobart Brothers Co. A 16-page booklet of interesting photographs and articles on welding, many of which feature time-and-money saving applications.

Dustless Blast Cleaning 250
Baldwin-Hall Co. A 4-page technical bulletin describes a new non-metallic, dustless mineral shot for blast cleaning. Physical and chemical details are given and photographs show performance on typical castings.

Store Accident Prevention 251
Scott Paper Co. An attractive and helpful booklet gives tips on preventing accidents in grocery stores. Emphasis is on good housekeeping and handling of materials. Features a safety check list to help manager find and remove store hazards.

PERSONAL PROTECTION

Neoprene Soles and Heels 252
Quabaug Rubber Co. A concise 8-page booklet describes and pictures four types of neoprene soles that are particularly suitable for industrial shoes, because of their resistance to heat, oil and chemicals and their slip-resistance characteristics.

Industrial Safety Equipment 253
Willson Products, Inc. A new, easy-to-read, 64-page general catalog is divided into four major sections: eye, head, respiratory, and welding protection. Illustrations, descriptions and ordering information are correlated for simplicity and practicality. Serves as a valuable and interesting reference book.

Heat Resistant Gloves 254
Mine Safety Appliances Co. An illustrated bulletin gives basic data on various styles of heat-resistant leather gloves for use in foundries, heat treating, welding, etc. Describes two types of leather: for 500 and 800 degrees F.

Narrow Front Welding Helmets.. 255
Jackson Products, Inc. Two types of helmets made from fiber-glass plastic in a narrow-front style are described and illustrated in this bulletin: fixed front and lift front designs. Information on broad front styles and parts lists are included.

Orlon & Dynel Work Clothes 256
Worklon, Inc. This new catalog gives full data on various styles and characteristics of work clothes made from Orlon or Dynel, which offer resistance to deterioration by acids and chemicals. Charts show resistance of materials to specific chemicals.

Leather Gloves and Clothing 257
Wicx-Merit Glove Co. A concise catalog describes and pictures various kinds of safety clothing made from leather. Included are welding gloves and mitts, jackets, overalls, aprons, bibs, sleeves, railroader's gloves and mitts, and general heavy- and light-duty work gloves.

Window Cleaner's Belts 258
Whitner-Chicago Co. This well-illustrated 4-page folder shows in detail a complete set of safety devices for window cleaners: safety belts, shoulder straps, nylon rope with manganese bronze terminals, etc., and various window anchors for installation in wood and metal.

High Leather Shoe 259
Hy-Test Safety Shoes. This bulletin gives construction details on a new high leather shoe for linemen, loggers, miners and other outdoor workers. In addition to safety toes, the shoe features water-proofing, double leather at wear points, steel shank, dacron stitching.

Safety Shoe Chart 260
Record Industrial Co. This brochure can be unfolded for use as a display chart showing various styles of safety shoes. Used in company shoe stores or on bulletin boards, it will assist workers in selecting shoe styles and also make them aware of the attractiveness of modern safety shoes.

NOISE CONTROL

Sound Analyzer 261
Hermon Hosmer Scott, Inc. Data sheet on a portable sound analyzer that separates complex noise, sound and vibration signals into their component frequency bands. Includes detailed specifications for the instrument.

Sound Absorbers 262
Elof Hansson, Inc. Illustrated bulletin describes easily installed portable sound absorbing devices that can be used in noisy areas to decrease the sound level. Bulletin shows the box-like devices suspended from the ceiling in a machine tool area.

MEDICAL AND HYGIENE

First Aid Kits 263
Pac-Kit Co. This illustrated 4-page bulletin describing unit-type first aid kits features equipment suitable for aircraft, buses, trucks

(Continued on next page)

SPECIAL OFFER BELOW VALID ONLY FOR THREE MONTHS AFTER PUBLICATION DATE.

READER'S INQUIRY CARD

HOW TO GET FREE DATA! **(No Postage Required)**

ADVERTISED PRODUCTS: Just insert the key number shown under each advertisement in the boxes below.

NEW PRODUCTS ("WHAT'S NEW" PAGES): Insert the key numbers shown on each item

FREE BULLETINS & CATALOGS: Insert the key numbers shown on this page.

April, 1955 **Please send me the following free data (Remember to fill in your name and address.)**

PLEASE PRINT

Name _____ Title _____

Company Name _____

Street Address _____

City _____ Zone _____ State _____

MAIL POSTAGE PAID CARD FOR MORE DATA

Free Bulletins (Cont'd)

and other vehicles. Also shown are kits for various types and sizes of industries, for individuals and small groups and for specialized hazards such as snake bites.

Electronic Towels 264
Electronic Towel Corp. How the "electronic" hot air hand drier can save washroom costs, how it differs from other electric hand driers, and how it reduces fire hazards and can be plugged into an ordinary electric outlet are outlined in this illustrated 8-page brochure.

Impregnated Salt Tablets 265
U. S. Safety Service Co. A bulletin that shows how salt tablets combat heat fatigue encountered by workers in high-temperature occupations or during hot weather. Bulletin emphasizes the impregnation process which permits the tablet to dissolve slowly to prevent nausea.

Smoke Photometer 266
Phoenix Precision Instrument Co. This 8-page bulletin gives specifications and full data on a self-contained instrument for measuring the concentrations of smoke, dust, fume, etc. particles in the atmosphere. Listed uses include air pollution studies, filter research, fan and air conditioning testing, medical research, etc.

FLOOR MAINTENANCE

Maintenance System 267
U. S. Sanitary Specialties Corp. This brochure discusses the time and material cost saving and safety factors of a system of floor maintenance for all types of floors. System features a spray method of applying cleaning solutions.

Floor Absorbents 268
Bridgeport Sawdust & Shavings Co., Inc. This bulletin describes two types of floor absorbents for the control of oil, water and grease spills. One type features rapid absorption, and the other maximum saturation capacity.

ELECTRICAL EQUIPMENT

Conductor System 269
Insul-8-Corp. This 28-page catalog describes enclosed conductor systems for the safe electrification of cranes and monorails without special engineering. Catalog includes parts list, engineering data and full description of standard and special installations.

Overhead Busway for Business Machines 270
Feedrail Corp. This bulletin describes a 60-ampere overhead trolley busway electrification system suitable for bringing power to business machines that often are rearranged as volume and type of work change. Bulletin outlines flexibility of system and lowering of rewiring and maintenance costs.

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No. 100 CESCO

When anyone must work in dusty air, or near splashing liquids, the new light-weight CESCO No. 100 Chemical Goggles are a must. They are comfortable to wear because they are moulded from black synthetic rubber and have wide, soft contact surfaces. Because they are perfectly contoured and fit snugly all around, they leave no open spaces, they provide complete protection. The elastic headband is easy to adjust.

The transparent plastic window is so wide that it permits full view. It is fitted into deep holding grooves, yet can be replaced in a few seconds. Fogging is prevented by baffled ventilator holes on each side. The No. 100 Chemical Goggles fit perfectly over most glasses.

• Ask your CESCO safety equipment distributor to show you this new goggle and the many other goggles in the complete CESCO line.

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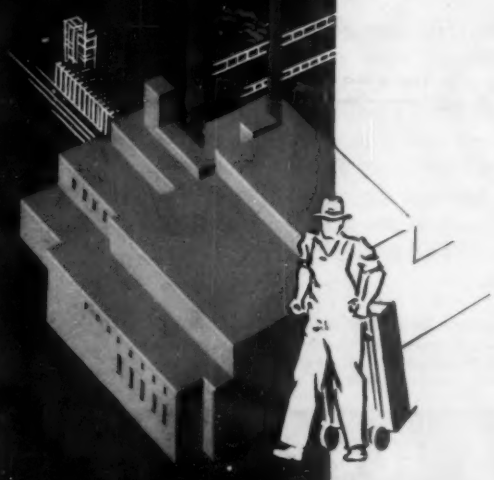
CESCO

CESCO FOR SAFETY

(For details, use Key # D-1 on card on page 85)

Thantis® LOZENGES

first aid for throat irritations



SORE THROATS due to coughs and colds, if neglected, may result in lost man hours of work.

THANTIS® Lozenges contain no antibiotic; they produce no unpleasant by-reactions in the mouth.

THANTIS Lozenges relieve pain promptly—reduce infection—act prophylactically.

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